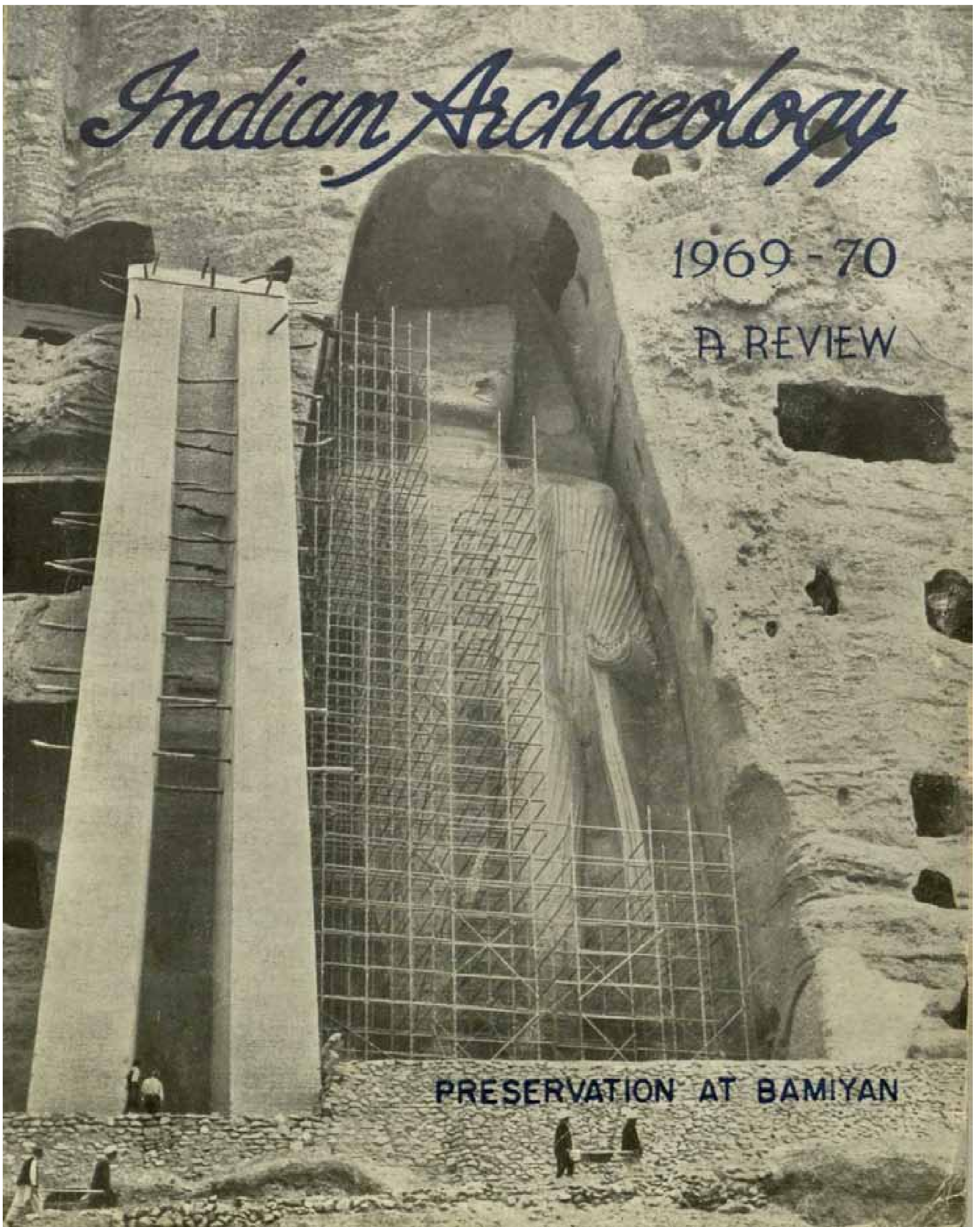

Indian Archaeology
1969-70
A REVIEW
PRESERVATION AT BAMIYAN

INDIAN ARCHAEOLOGY 1969-70
—A REVIEW

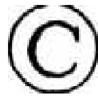
EDITED BY
B. B. **LAL**
Director General
Archaeological Survey of India



ARCHAEOLOGICAL SURVEY OF INDIA
GOVERNMENT **OF INDIA**
NEW DELHI
1973

Cover:

The Archaeological Survey. Of India, in collaboration with the Royal Afghan Government, has undertaken a programme of conservation and preservation of the famous rock-cut Buddhist shrines (third-sixth centuries A.D.) containing images of the Small and the Big Buddha and the mural paintings. The photograph shows the work in progress in the shrine of the 38-m. high Small Buddha.



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PREFACE

The *Review* for 1968-69, which was press-ready in August 1969, could see the light of the day only towards the end of 1971. This has been due to many reasons which I need not go into here. But I would certainly like to apologize to the readers for this inordinate dealy. For the same reasons, the subsequent numbers have also been delayed. The present number is now likely to be out by the end of this year, while that for 1970-71 about the beginning of the next.

Very soon I would be relinquishing the charge of my office and hope that my successor will have a better luck with the publication schemes which have got stuck up for inordinately long periods.

I would like to express my gratitude 10 all those who have supplied the data for inclusion in the present number. I would also like to thank Dr. G. S. Gai and Sarvashri B. K. Thapar, Krishna Deva, R. Sen Gupta, M. C. Joshi, K. S. Ramachandran, N. C. Ghosh, B. M. Pande, W. H. Siddiqi and S. R. Varma for the help they have so kindly given me in the publication of this issue.

B. B. LAL

New Delhi

June 2, 1972

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INDIAN ARCHAEOLOGY 1969-70

—A REVIEW

1. EXPLORATIONS AND EXCAVATIONS

ANDHRA PRADESH

1. EXCAVATION AT BHATTIPROLU, DISTRICT GUNTUR.—With a view to ascertaining the structural features of the Buddhist *stupa* at the site, a small-scale excavation was conducted by Dr. R. Subrahmanyam of the South-eastern Circle of the Archaeological Survey of India.[1]

The excavation revealed that the *stupa* was built of bricks (size: 45 X 30 X 8 cm.), the dome masonry being in receding concentric circles. It had *ayaka*-platforms surmounted by pillars at the four cardinal points. Resting over the drum of" the *stupa,* around the rise of the dome was a 1.3-m. wide pathway. Remains of a railing were noticed around the *stupa.* The upper five metres or so of the original dome have disappeared. According to Alexander Rea, who had conducted excavation at the site as early as 1892, the *stupa* was star-shaped on plan with a hollow in the centre and with a recorded diameter of approximately 44 m. During the present excavation, however, the diameter was actually found to be 47 m.

The excavation also laid bare two wings of the *vihara* attached to the *stupa.* Each wing consists of a set of four rooms, measuring 2.75 x 1.8 m., with a common front verandah and an entrance on the east. Besides, a square cell with semi-circular walls on the three sides, representing possibly the earliest form of the *chaitya-griha* in Andhra Pradesh, was also found. A stucco head of the Buddha (pl. IA) and a stone sculpture of a seated *nagaraja* (pl. IB) were obtained from this area. Besides, sherds of the Black-and-red and Red Polished Wares were also recovered.

2. EXPLORATION IN DISTRICT KRISHNA.—During the course of his exploration around Akiripalli in Taluk Nuzvid, Shri T.V.G. Sastri of the South-eastern Circle of the Survey found a neolithic celt from a field to the north-west of the village. He also noticed megalithic burials in the mountain-slopes to the north of the village.

ASSAM

3. EXPLORATION IN DISTRICT GARO HILLS.—Under the auspices of the Department of Anthropology, University of Gauhati, Prof. M. C. Goswami and Dr. T. C. Sharma, assisted by Sarvashri Harish Chandra Sharma and Sankar Kumar Roy explored areas

[1] The Archaeological Survey of India is referred to in the following pages as the 'Survey'.

of the Arbella range and located three Stone Age sites at f1) Selbalgiri, Locality 3 (Mokbol-Chiring), (ii) Michimagiri, and (iii) Michimagiri, Locality 1.

Selbalgiri, Locality 3 (Mokbol-Chiring) lies about 3 km. from the village of Selbalgiri, on way to Michimagiri. The site was covered by dense vegetation, forbidding a thorough investigation of the area. However, a good collection of artefacts was made, which included implements of the Early and Late Stone Ages. The tools were less rolled as compared to those from other sites in the Garo Hills.

Michimagiri is situated on the slope of a hillock, about 4 km. from Selbalgiri. On the northern slope of this hillock, which shows an eroded surface, a large number (over six hundred) of heavily weathered and rolled stone tools were found. These belonged variously to the Early, Middle and Late Stone Ages as also to the Neolithic assemblage.

Michimagiri Locality 1 lies on a hillock, locally known as Watri Abri, at a distance of about 1 km. from the village. Over one hundred tools, variously belonging to the Early, Middle and Late Stone Ages, and to the Neolithic Age were collected from the site.

Typologically, the collection from the above-mentioned sites comprised the following groups: -(i) large, roughly-flaked heavy tools such as choppers, handaxes, discs and picks; (ii) small tools, mainly on flakes detached from large prepared cores of doleritic basalt, such as scrapers, points, borers, etc.; (iii) microliths, made on thin flakes, comprising parallel-sided blades, small scrapers, points, arrow-heads (?), etc.; and (iv) chipped and ground celts and flakes, blades and arrow-heads, in association with a crude, hand-made pottery.

BIHAR

4. EXCAVATION AT CHAMPA, DISTRICT BHAGALPUR.—The Department of Ancient Indian History and Archaeology, University of Patna, under Professor B. P. Sinha, undertook excavation at Champa, situated about 5 km. west of Bhagalpur. Besides the impartation of training in field-archaeology to the post-graduate students, the principal objective of the excavation was to determine the location of the ancient city of Champa, mentioned in early Taina literature as one of the six important cities of the time of Maha-vira and Buddha. The eastern portion of the mound, which was somewhat less disturbed than the other three, was selected for the operations. With a view to determining the nature of the defences, a trench, measuring 36 X 4 m., was laid out.

The excavation revealed a mud rampart, divisible into two phases. In the earlier phase, it was of blackish soil capped by a rubble spread. A large number of terracotta sling-balls, charcoal pieces, showing fibres of burnt bamboos, and ash were noticed in the deposit. Other associated finds included a few copper cast coins, black-slipped and grey wares and a few sherds of the Northern Black Polished Ware (abbreviated in the following pages as N. B. P. Ware). In the later phase, the defences were built of yellow and red soils, with an embankment of brick debris, possibly to prevent scouring by water. Associated with this phase of the fortification were the N.B.P., and the black-and-red wares, Sunga terracotta figurines and plaques, terracotta sealings, bone points, iron objects, cast copper coins, and a few punch-marked copper coins with silver coating. At a distance of 4-5 m. further west of the cutting was found a 'ghost wall' atop the rampart, possibly indicating another structural phase of the fortification. The wall, however, has been completely robbed leaving traces of the robber's trench.

5. EXPLORATION IN DISTRICT GAYA.—During the course of an exploration in the District, Shri Lala Aditya Narain of the Department of Archaeology and Museums, Government of Bihar, and Shri B. Narayan of the University of Patna discovered a site yielding Early and Middle Stone Age tools. A section, showing a basal gravel, capped by red-brown silt, was also recorded.

While a large number of Early Stone Age tools was collected from the bed of the nullah, a few (handaxes, picks, choppers, etc.) were also found *in situ* in the gravel. The tools of the Middle Stone Age (scrapers, blades, etc.) were found scattered on the top of the red-brown silt as well as in the nullah. The material employed for the manufacture of both Early and Middle Stone Age tools was quartzite of various shades.

6. EXCAVATION AT CHIRAND, DISTRICT SARAN.—In continuation of the previous work {*Indian Archaeology 1968-69—A Review,*[1] p. 5), Professor B. P. Sinha and Dr. B. S. Verma of the Department of Archaeology and Museums, Government of Bihar, resumed excavation at Chirand. This year's work brought to light, for the first time, a full-fledged neolithic culture in the Ganga valley.

Two trenches, measuring respectively 10 X 10 m. and 10 X 15 m., were taken up for excavation which revealed, on an average, 3-5 m. thick strata of neolithic affiliation. Among the notable finds recovered from these strata, mention may be made of (i) objects of bone and antlers (pis. II-IV) like hammers, needles, points, borers, pins, styluses; tanged and socketed arrow-heads; pendants, personal ornaments like bangles (prepared out of tortoise bone), reel-shaped objects, discs and a broken comb; (ii) ground stone objects such as celts (two lone examples), pestles, balls, querns, hammers, etc. (pi. . V); (iii) microliths, including parallel-sided blades, scrapers, tanged arrow-heads, points, lunates and borers (pi. VI); (iv) beads (pi. VII) of chalcedony, agate, jasper, steatite , and faience, including a few unfinished ones indicating a local industry; (v) terracotta figurines, snowing humped bulls, birds and *naga;* and (vi) other terracotta objects like bangles, marbles, perforated discs, perhaps used as spindle whorls, toy-cart wheels, pendants with incised and punctured decoration, stone beads, etc. (pi. VIII). The ceramics associated with this culture included red, grey, black and black-and-red wares, all handmade. It is interesting to note that even during the neolithic times, the technique of inverted firing was known. The forms and the fabric of this ware, however, are quite different from the succeeding deposits of the chalcolithic period. While some of the pots in the grey ware have lustrous burnishing over the outer surface, the lower part of the others was found to be rusticated. The neck-portion of the vases in this fabric was often decorated with applique designs to conceal the luting. Post-firing graffiti were also noticed on some of the pots. More, interesting, however, was the occurrence of mat-impression on a sherd, indicating the knowledge, during the period, of the technique of preparing mats out of reeds. The shapes (pi. IXA) represented in the different wares included: (i) vases, sometimes spouted; (ii) bowls, occasionally lipped or perforated or having channel-spout; (iii) footed-cups, etc. A noteworthy feature of the grey ware was the post-firing painting in ochre. Occasionally, this feature was present in red and black-and-red wares as well. The design-repertoire was essentially linear, such as crisscrosses, concentric semi-circles and rim-bands (pi. IXB).

Paddy-husk impressions on some of the pieces of burnt clay as also some grains of . charred rice indicate the use of that cereal by the inhabitants.

[1] This publication is referred to in the following pages by the year only.

No house-plans of this culture have so far been traced. Associated with the late phase of the culture, however, was found a circular floor, approximately 4 m. in diameter and having a series of open hearths *(chullahs).* A few post-holes were also noticed outside the limits of this floor. A large number of burnt chunks of clay with reed or bamboo impression was obtained from the associated strata, indicating that the settlement perished, perhaps as a result of a conflagration.

Since the lowest levels- of the chalcolithic culture at Chirand have been dated by the C-14 method to 1650 B.C., it is likely that the beginning of the preceding neolithic culture, which is represented by a 3.5 m. thick deposit, may go back to *circa* 2000 B.C.

DELHI

7. EXCAVATION AT PURANA QILA, DELHI.—The Exploration Wing of the Survey undertook an excavation at Purana Qila, traditionally believed to represent the site of ancient Indraprastha, associated with the Pandavas in the *Mahabharata.* The work was directed by Sarvashri B. B. Lal, B. K. Thapar and M. C. Joshi, with assistance from Sarvashri S. Banerjee, N. C. Ghosh, J. S. Nigam, B. M. Pande, K. S. Ramachandran and W. H. Siddiqi.

In 1955, trial trenches at three points in the lower levels of the mound had indicated that the earliest settlement here might have begun around 1000 B.C. *(1954-55,* p. 13-14). The trial dig had also revealed structures of the Sunga and Kushan periods. Consistent with the scope of the work, the evidence was of a restricted kind. Besides the impartation of field-training to the students of the School of Archaeology, the specific objectives of the present excavation were (a) to obtain the complete sequence of occupation at the site backwards from the period of Humayun (A.D. 1540-56), and (b) to lay bare sizable portions of the settlement of each period. To realize these objectives, a 30 m. square area along the northern flank of the passage leading to the water- gate, about 50 m. south of the Sher Mandal (popularly known as Humayun's Library), was taken up for excavation. This area permitted excavation in a stepped manner, facilitating a clear view of the structures of each successive period (pl. X).

During this field-season, the excavation, without reaching the natural soil, progressed to a depth of about 9 m. from the surface, where Mauryan levels *(circa* third century B.C.) were encountered. From the Mauryan levels upwards, the sequence of occupation was found to run through Sunga, Kushan, Gupta, post-Gupta, Rajput and Delhi Sultanate Periods to the Mughal.

The Mauryan Period was characterized by the occurrence of: (i) mud-floors; (ii) N.B.P. Ware; (iii) grey terracotta figurines, both human (pl. XIA) and animal; (iv) an uninscribed cast copper coin (pl. XII, 1), and (v) a clay sealing bearing such motifs as arched hill, tree and a hollow cross (pl. XVIA, 1).

The Sunga Period was marked by the presence of: (i) the remains of rubble structures belonging to two distinct phases; (ii) typical miniature bowl with incurved rim; (iii) terracotta plaques (pl. XIB), depicting *mithuna,* standing female deity under foliage, and Lakshmi, along with a few moulds representing female figures; (iv) bone points; (v) various types of beads; and (vi) two terracotta sealings reading *dhamagiri* (pl. XVI A, 2) and *katakara* (?). Sherds of the N.B.P. were also found in the late levels of this Period.

The Saka-Kushan Period was distinguished by the structural remains of baked-bricks (size: 37 X 22 X 5 cm.). In one of the houses, remains of a flight of steps were

also found (pl. XIII A). The pottery, which mainly consisted of a red ware of medium fabric, showed some interesting decorative designs consisting of spirals, *srivatsa, svastika* and fish symbols. Among the forms, Kushan bowls and sprinklers were present throughout the deposit. Other important finds of the Period comprised: (i) copper coins of Mathura kings, Kushans and Yaudheyas (pl. XII, 2-8); (ii) bone dice of various types; (iii) terracotta plaques and figurines showing deities and animals, a small *yaksha* (Kubera) figure prepared out of a double-mould, a turbaned head with moustache and bearing on the forehead the mark of *urna* (pl. XIII B), and a damaged plaque depicting a divinity holding a bunch of grapes.

The Gupta Period was represented principally by the remains of brick structures showing three to four structural phases. A noteworthy structural feature of the Period was the change in the orientation of the houses, which, however, were constructed out of the re-used bricks of the earlier Period. Amongst the notable finds mention may be made of: (i) moulded pottery, including a lid bearing the representation of *kinnara* (pl. XIV); (ii) damaged terracotta female figurine; and (iii) three terracotta seals, bearing the outline of a conch above and a legend *Gopasya* below, and on the remaining two *jitam-bhagavata* and *Sri traividya,* respectively (pl. XVI A, 3-5). The legend in each case was in Gupta Brahmi characters.

The Post-Gupta Period was marked by the presence of a few structures, some with sagging walls, made of re-used bricks. The associated pottery was mainly a red ware, in which the knife-edged bowl was a distinctive type.

The Rajput Period was characterized by structures built of re-used bricks as also of mud-bricks. One of the house-walls showed alternate courses of baked and mud-bricks. Mud-floors with hearths were also encountered in some houses. The most impressive structure of the Period, however, was a fortification-wall (pl. XV), belonging perhaps to the time of the Tomars. Built of rubble with a basal width of 1.5 m., it was exposed to a length of over 30 m. Other significant finds of the Period included: (i) copper coins of the 'bull and horse-man' type (pl. XII, 9 and 10); (ii) crude terracotta figurines (pl. XVI B); (iii) terracotta beads; (iv) a sherd with damaged Nagari inscription; and (v) ornate moulded bricks. The associated pottery was mainly of red and black wares, occasionally decorated with simple painted, stamped or incised designs—the knuckle design, being a common feature on the rims of the vases.

The Sultanate Period was represented by houses of re-used bricks, built over the debris of earlier structures. Some of the houses were found to be built of partly-dressed rubble. A significant feature of the Period was the use of the glazed ware, both of sandy friable as also of normal texture. Coins of Balban and Firuz Shah Tughluq (pl. XII, 11 and 12) were also obtained from the associated strata.

The Mughal Period was represented principally by a huge-pit cut into the deposits of the Sultanate and earlier Periods, and a few structures of dressed-rubble built in a different alignment. The distinctive ceramics of the Period included: (i) glazed ware; (ii) a *de luxe* egg-shell thin ware with elaborately decorated exterior; (iii) the Chinese Celadon Ware; and (iv) the Chinese porcelain (pl. XVIII A). Some of the bowls of the last-mentioned ware bore painted inscriptions 'made under the Great Ming Dynasty in the Cheng Hua Era' (A.D. 1465-87) (pl. XVIII B). Another epigraph recorded a fairy tale in verse. This Ware was possibly a treasured possession, for quite a few fragments bear evidence of their being joined by means of iron rivets. Of the other finds, mention may be made of: (i) coins of Adil Shah Sur and Shah 'Alam (pl. XII, 13-15); (ii) glass wine-bottles with amphalos bases; (iii) a gold ear-ornament studded with emerald and pearls

(pi. XVII B); (iv) shell and glass bangles; (v) beads of semi-precious stones; (vi) a *surahi* decorated with cypress designs on the exterior (pl. XVII A); and (vii) other household objects of daily use.

GUJARAT

8. EXPLORATION IN DISTRICTS AMRELI, BHAVNAGAR, KUTCH AND SABAR KANTHA.—The Department of Archaeology, Government of Gujarat, located the following sites:

District	*Taluk*	*Site*	*Cultural affiliation*
Amreli	Kuka-Vavavadia	Bangasara	Late Historical
-do-	Lathi	Damnagar	-do-
Bhavnagar	. Savarkundala	Dhaskerala	-do-
Kutch	Nakhatrana	Netra-Khirasara	Harappan
-do- .	-do-	Gunthri-Gadh	Early Historical
-do-	-do-	Mound of Ancient Fort (Devisar)	-do-
-do-	Lakhpat	Mound of Ancient Fort (Junapathgadh)	-do-
Sabar Kantha	Khedbrahma	Delvada	Late Stone Age

9. EXPLORATION IN DISTRICT BHARUCH.—In the course of an exploration in the District, Shri K. P. Gupta of the Survey, explored Middle and Late Stone Age sites at Bharadia, Chattawada, Chikli, Ghata, Gundia, Handi, Jamnia, Jitgadh, Khojalwasa, Movi, Nani Nikole, Patal, Petia, Raipara and Sambaria, in Valia and Nandod Taluks and at Chikali and Navagam in Sagbara Taluk.

In Taluk Nandod, Shri H. K. Chaturvedi of the Survey, found Late Stone Age tools at Dabheri, Moti Bhamri, Nava Vaghpura (Jetpur), Piparia, Raipura, and Vavdi. The collection included fluted cores, blades and borers. He also located a Late Stone Age site at Jhampa, situated along the river Karjan and obtained a large number of fluted cores, blades, scrapers, points and borers. In the same Taluk, Shri N. M. Ganam of the Survey, located Late Stone Age sites at Bekharia, Limdi, Rel and Umrwa.

In Taluk Dediapada, Shri Ganam discovered Late Stone Age sites at Bedvan Moti and Sejpur. The last-named one seems to be a factory-site and yielded a large number of fluted cores, flakes, lunates, points and scrapers.

Dr. S. C. Malik of the Department of Archaeology, Ancient History and Culture of the M. S. University of Baroda, recovered from the foundation-debris of a building under construction in the College area, ancient pottery, bricks, bones, etc. Of these, some of the red-slipped sherds were found to compare with the Late Harappan types,

especially those obtained from Somnath IA, Rangpur II B and II C and Jokha, while a complete baked-brick measured 51 X 26 X 9 cm. and bore semi-circular finger-marks. It may be recalled that during the previous excavation at Bharuch *(1959-60,* p. 19) such an evidence was not available.

10. EXPLORATION AT CHAMPANER, DISTRICT PANCH MAHALS.—The Department of Archaeology and Ancient History of the M.S. University of Baroda undertook a detailed exploration of Champaner, the medieval capital of Gujarat. The exploration, conducted under the guidance of Professor R. N. Mehta, revealed that the city of Champaner, as built by Mahmud Begra, had a large cantonment. The city had nine gates, the roads leading from which met at three points near the Royal Enclosure. The western-half portion of the Royal Enclosure was used for palaces, gardens, mosques, etc. Some of the houses also contained mural paintings. The finds obtained from this area included Chinese Porcelain Ware (pl. XIX A), some of which also bore inscriptions in Chinese characters (pl. XIX B), rings of carnelian, iron arrow-heads and catapult-marbles.

Along the river Jorwan, tools of Early and Middle Stone Ages were obtained. The section on the river revealed two different gravels capped by loess-like earth and black soil.

11. EXPLORATION IN DISTRICT RAJKOT.—Shri V. S. Lele of the Deccan College Post graduate and Research Institute, Pune, in collaboration with the Department of Archaeo logy, Government of Gujarat, discovered an Early Stone Age site near Atkot in the Bhadar valley. A large number of tools was recovered from a sandy, pebbly-gravel exposed at the base of 3 to 5 m. thick section along the right bank of the river. The collection consisted of handaxes, scrapers, flakes, etc., all made on dolerite.

12. EXPLORATION IN DISTRICT SURAT.—Professor H. D. Sankalia, accompanied by Drs. G. G. Mujumdar, R. S. Pappu and Shri S. N. Rajaguru of the Deccan College Post graduate and Research Institute, Pune, and Sarvashri D. B. Chitale and S. A. Sali of the Survey, discovered a few Early Stone Age sites in the District. A flake on basalt was recovered *in situ* from an exposed basal pebbly-gravel, about 1/2 km. downstream of the Uka Dam on the right bank of the Tapti. A 'Levallosian' flake on dolerite was found near the outcrop of a dyke in the field near Mirkot, 6 km. east of Fort Songarh.

13. EXCAVATION AT MALVAN, DISTRICT SURAT.—Dr. F. R. Allchin of the Cambridge University and Shri J. P. Joshi, assisted by Sarvashri A. K. Sharma and J. P. Srivastava of the Excavations Branch of the Survey, undertook a small-scale excavation at Malvan, already subjected to intensive exploration *(1967-68,* pp. 10-12).

The excavation yielded evidence of two cultural periods (fig. 1) represented by a 1.3 m. thick occupation-strata. Of these, Period I belonged essentially to the Late to Post-Harappan culture and Period II to the early medieval times. The site seems to have been badly eroded.

The principal structural remains of Period I comprised a ditch, running in the east-west direction (pl. XX A). The ditch, traced to a length of over 18 m. was 1.5 m. wide and had an average depth of 1.1 m. cut into the natural soil. Its sides were found to be inclined at an angle of 30°, and gradually widen towards the eastern side. The-spoil from its original dig seems to have been spread over on both the sides. On the northern side, however, it was found banked up to form a part of a mud-brick structure of which the

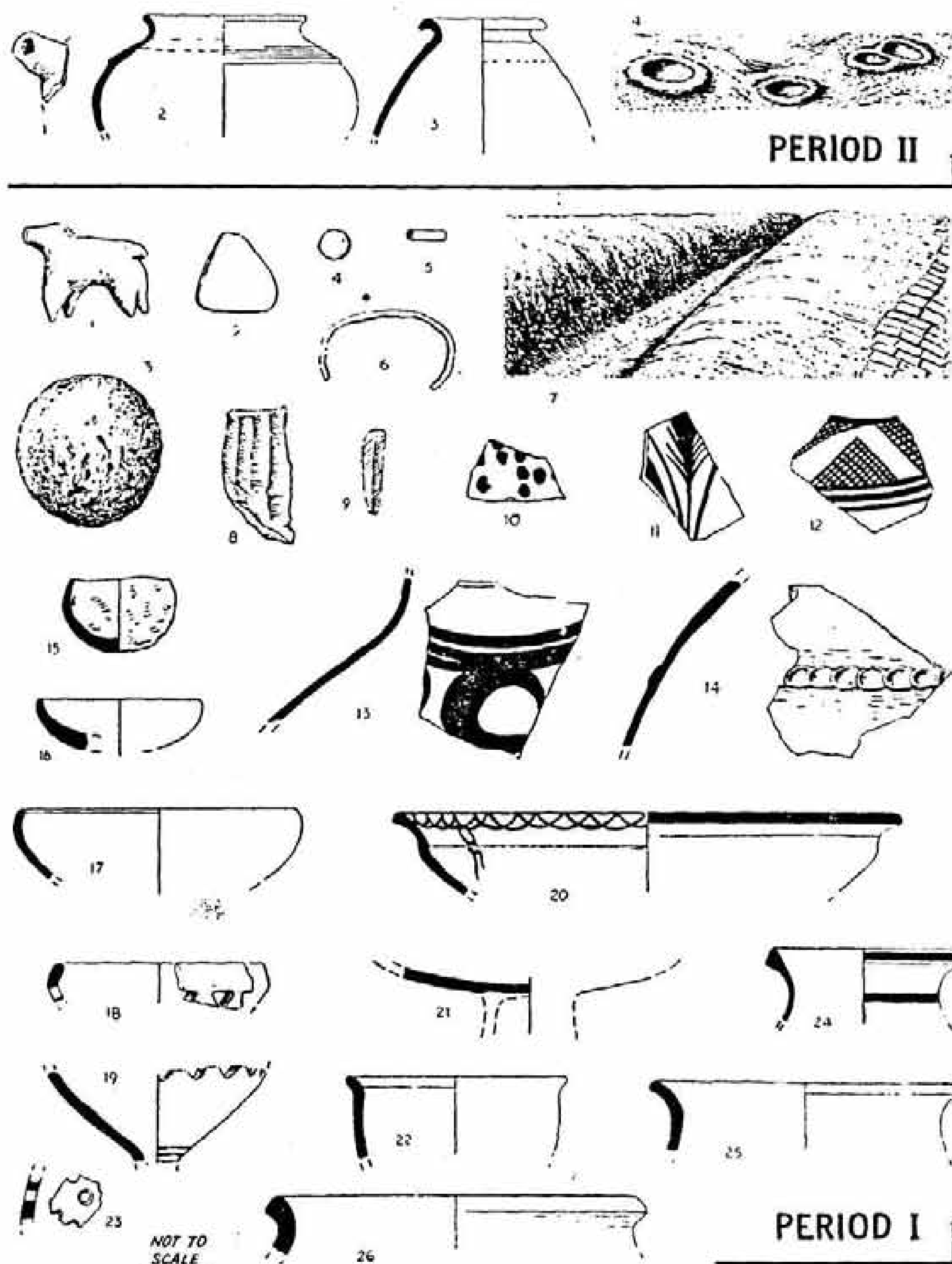

MALVAN SURAT DISTRICT. GUJARAT. 1970.
PERIOD II
PERIOD I
NOT TO SCALE

FIG. 1

original plan could not be recovered. The size of the mud-bricks used was 27 X 17 X 9 cm. It is surmised that the original habitation lay principally to the north of this structure. To the south of the ditch were found a number of post-holes, at 2.8 m. interval dug into the heaped spoil, apparently to provide some sort of a fence. Besides, remains of a series of ovens (pl. XX B) were also exposed. From the filling of the ditch proper a large quantity of cattle-bones was obtained.

A series of small trenches were laid across the kidney-shaped inlet towards the principal channel connecting it with Tapti estuary. These trenches revealed alternate deposits of tidal sand and mud, and yielded both fresh water and marine shells, cores, flakes and potsherds at varying depths. From a preliminary study of this material, it is clear that anciently, at high tide, water came up to within a short distance of the bank on which the settlement was located, thus confirming the earlier reported view that the inlet could have been used as a harbour.

The pottery of Period I showed six principal groups: red, buff, black-and-red, lustrous red, chocolate and coarse. All these were current simultaneously throughout the period; the black-and-red ware, however, being found in small quantities. While several sherds of the last-mentioned ware bore scratched grafftti, no traces of painting were available. An interesting feature was the presence of the perforated vases in the red, coarse and chocolate wares; the shapes in the last-mentioned being quite uncommon.

The other finds recovered from this period included: (i) blades of jasper, agate, chalcedony and bloodstone with an unexpectedly high ratio of cores to flake-blades and an almost total absence of retouched specimens; (ii) objects of copper or bronze, notably a bangle and a small rod; (iii) terracotta humped bulls; (iv) circular or bun-shaped terracotta cakes; and (v) beads of paste and carnelian. Besides, a large number of animal bones, in different stages of mineralization, representing domestic cattle, goat, sheep, dog, pig, deer and wild *Barasingha,* along with a few bones of birds and fish", were also obtained.

The occupation of Period II was of a temporary character and was distinguished by the occurrence of a black ware ascribable to the end of the first millennium A.D.

14. EXPLORATION IN DISTRICT VADODARA.—In the course of an exploration, conducted bv the Department of Archaeology and Ancient History of the M. S. University of Baroda, an early historical site was located at Ajabpura in Taluk Savli. The surface collection of the finds included sherds of amphora, Kshatrapa coins and a terracotta seal with Brahmi legend reading *Varunadeva.*

15. EXPLORATION IN DISTRICT VALSAD.—Shri D. B. Chitale of the Survey found tools of the Middle and Late Stone Ages at Khaparia in Taluk Gandevi. The collection com prised points, scrapers, blades and lunates. He also located a Middle Stone Age site at Sindhai in Taluk Bansda and collected scrapers and points therefrom.

Professor H. D. Sankalia, accompanied by Drs. G. G. Majumdar, R. S. Pappu and Shri S. N. Rajguru of the Deccan College Postgraduate and Research Institute, Pune, and Sarvashri D. B. Chitale and S. A. Sali of the Survey obtained large number of flakes from a basal pebbly-gravel (about 1 to 1.5 m. in thickness), exposed on the left bank of the river Zakri, a tributary of the Purana, near Malotha on Vyara-Bansda road. The basal gravel was found to be overlain by 5 m. thick *kankary* brownish silt which has intercalated layers of sands and gravels. All the flakes, being in mint condi-

tion, were made on dolerite, the dyke of which is exposed in the bed of a stream at Malotha.

JAMMU AND KASHMIR

16. EXPLORATION IN DISTRICT KASHMIR SOUTH.—Professor H. D. Sankalia of the Deccan College Postgraduate and Research Institute, Pune, assisted by Sarvashri R. K.

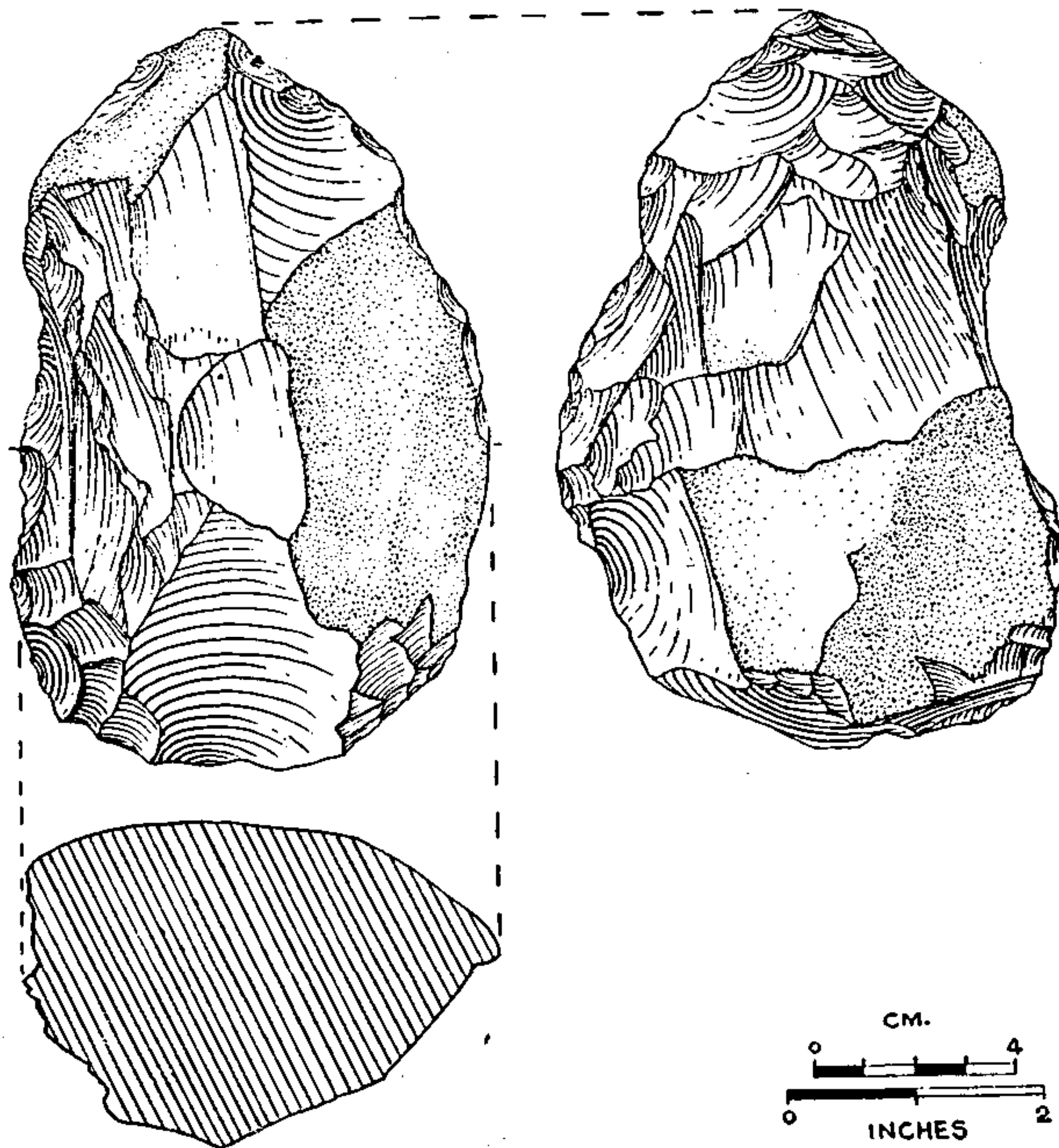
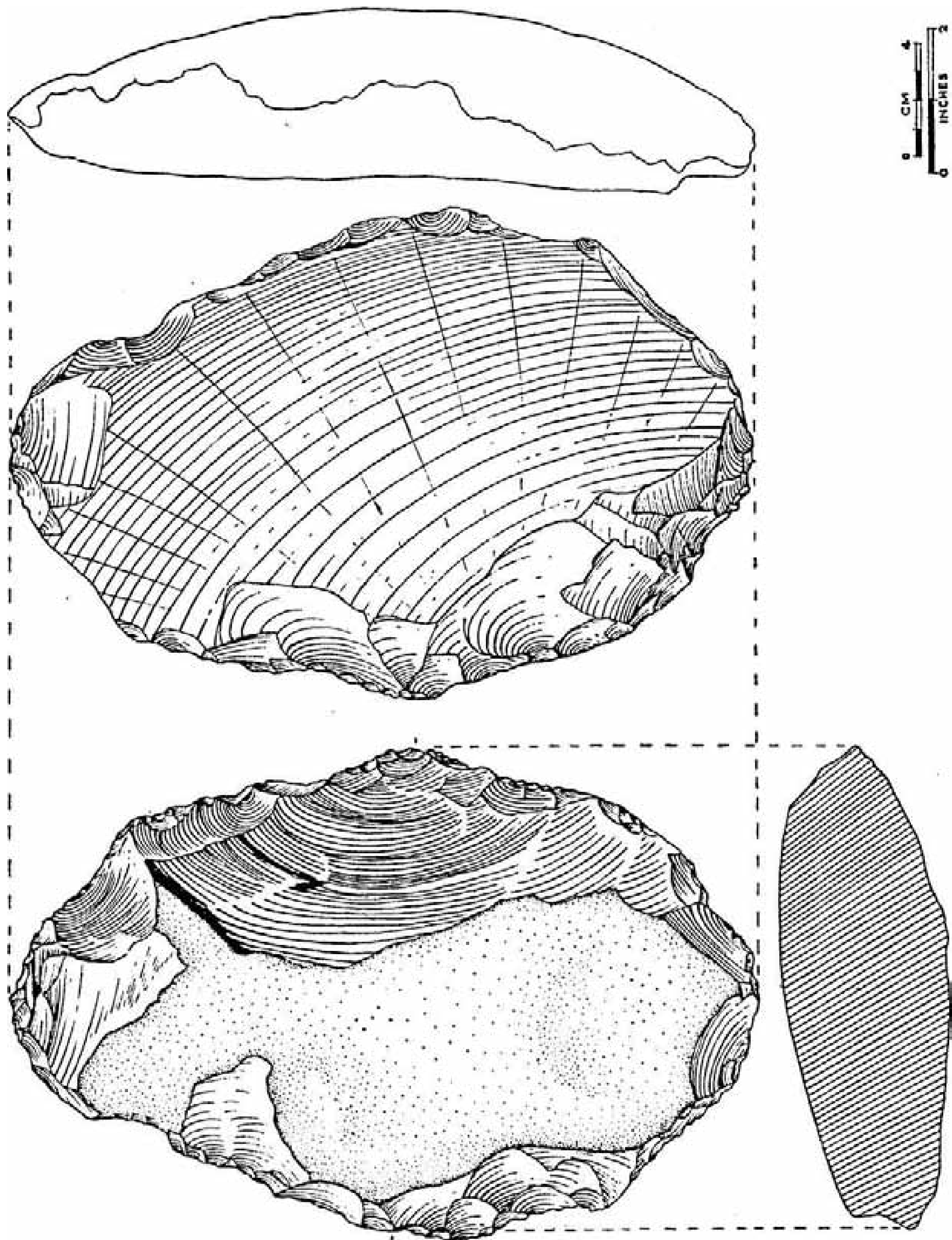
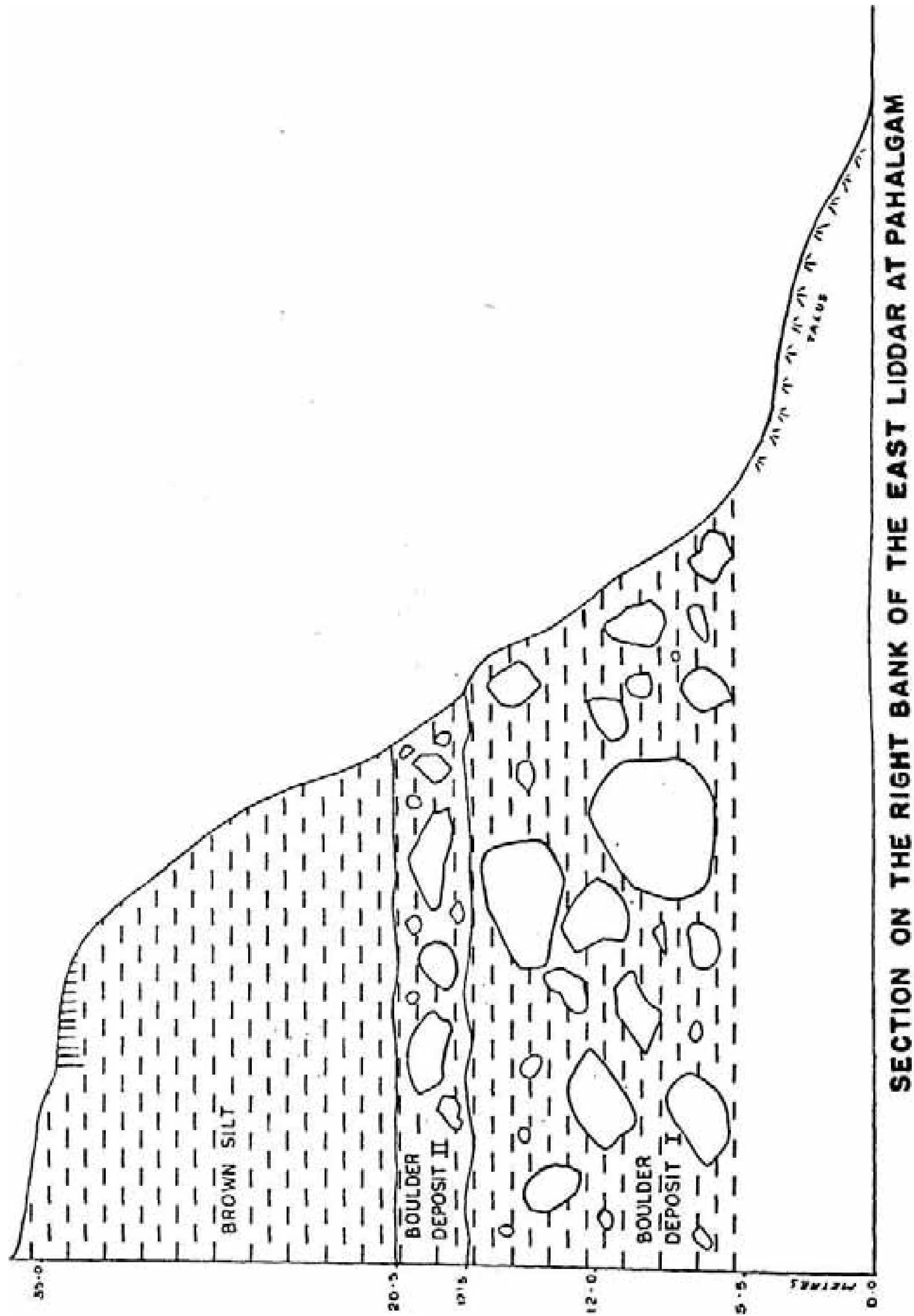


FIG. 2


CM
INCHES



SECTION ON THE RIGHT BANK OF THE EAST LIDDAR AT PAHALGAM

FIG. 4

Pant and Sardari Lai of the Frontier Circle of the Survey, discovered Early Stone Age tools at Pahalgam and Liddar Valley, in deposits assignable respectively to the Second Glacial and the Second Interglacial (fig. 4). In the former (pl. XXII A), a huge flake (fig. 3, pl. XXI A and XXI B) was found, while at the junction of the Second Interglacial deposit and the brown clay was discovered an Abbevelian handaxe (fig. 2; pl. XXI C and XXI D). The flake is made of trap, and shows two distinct flake-scars, along one edge on one surface and along the opposite edge on the other.

Smt. Sankalia, Sarvashri R. K. Pant, Sardari Lai and Professor Sankalia discovered a stone-work industry including remains of dishes, bowls, etc., on the mound overlooking the Liddar Valley near the tenth century temple. Further exploration brought to light a large quantity of chips and unfinished bowls, dishes, etc., on the slope of the hill now covered with pines.

In the course of an exploration in the District, the Frontier Circle of the Survey, under Shri T. N. Khazanchi located megalithic sites at: (i) Waztal (pl. XXII B and XXIII A) about 12 km. from the Mattan Spring; and (ii) Brah (pl. XXIII B), about 9.6 km. east of Martand. At the former site were noticed about twenty menhirs lying scattered in a field. A few pieces of gritty red ware associated with the megalithic-complex at Burzahom were also found. As at Burzahom, the menhirs do not fall in any plan. At the latter site, the complex consisted of more than half a dozen menhirs (pl.. XXV B) lying, widely dispersed on a sloping *karewa* just at the outskirts of the village. The menhirs are located so wide apart that no coherent plan can be made out. A few sherds of gritty red ware were also found here.

17. EXCAVATION AT MARTAND, DISTRICT KASHMIR SOUTH.—Shri T. N. Khazanchi, assisted by Shri Sardari Lai of the Frontier Circle of the Survey undertook a trial excavation in the area. Two small trenches were taken up for excavation on the southern side of the temple (pl. XXIV).

The excavation revealed remains of earlier floor-levels which support the belief of Kalhana (expressed in the *Rajatarangini* composed in the twelfth century A.D.) that the temple at Martand was built over the ruins of an earlier one. This floor-level was found at a depth of 1.3 m. below surface and appears to be a general feature of the site. Below this level, regular occupational deposits were encountered up to the natural soil which was reached at a depth of 3.65 m. from the surface. At about 2.40 m. below surface, were found two huge storage-jars (pl. XXV A), one with a lid and the other without it. Significantly enough, it is for the first time that such a big-sized storage jar has been found in Kashmir with a lid. The storage jars used in Kashmir now are without lids. No structures, however, were found in the excavated trenches. Among the finds, mention may be made of a terracotta plaque, representing a crude figure, probably Siva as Bhairava. The pottery (fig. 5) obtained from these levels was of four categories: red-slipped ware of medium fabric, represented by various shapes including a dish-on-stand; black-slipped ware of thin fabric, represented mainly by bowls; thick gritty-red ware, mainly represented by basins; and dull-red ware in thin fabric, represented mainly by miniature vases. Besides, a sherd of a violet-coloured stone ware was also found.

KERALA

18. EXCAVATIONS AT CRANGANORE, DISTRICT TRICHUR.—The Southern Circle of the Survey, in collaboration with the Department of Archaeology, Government of Kerala,

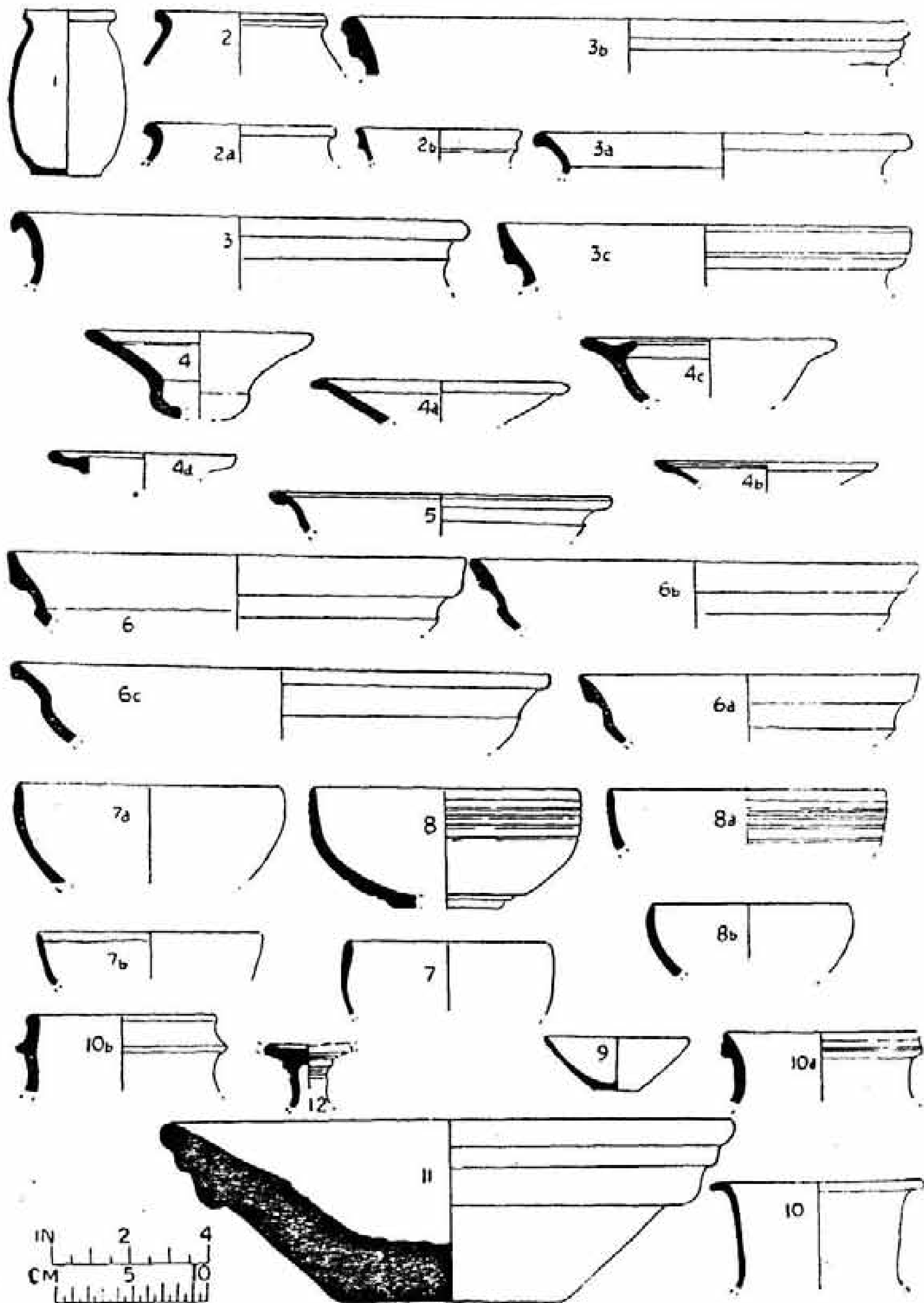

1
2
3b
2a
2b
3a
3
3c
4
4a
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4d
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8a
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10b
12
9
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Fig. 5

under Shri K. V. Soundara Rajan, assisted by Dr. K. V. Raman and Shri N. G. Unnithan, respectively, carried out excavations at various places in and around Cranganore viz., at Karuppadana, Kilattali, Madilakam, Tirukkulasekharapuram, and Tiruvanjikulam. The excavations revealed cultural remains of ninth to eleventh centuries, belonging to the period of the Cheras.

The excavation at Kilattali was conducted on a raised mound within the temple-compound. The temple, according to epigraphical and architectural evidence, is ascribable to the tenth century A.D., and was one of the four famous *Talis* in the capital of the second Chera empire. The excavation revealed a i m . thick cultural deposit yielding a sturdy red ware and flat roof-tiles, similar to those found at Cheraman Parambu. In a trench laid close to the temple, against its foundation, were found similar antiquities. At Tirukkulasekharapuram three trenches were laid out, two inside and one outside the temple, which architecturally can be dated to the tenth-eleventh centuries A.D. The excavation revealed a 70 cm. thick occupation-deposit inside the temple premises. The earliest layer yielded the usual red pottery and flat roof tiles, ascribable to the tenth century A.D. The trench outside the temple yielded two fragmentary laterite walls (pl. XXVI A) of the same period.

At Madilakam, anciently called Trikhnamadilakam and described in fourteenth century works as a' walled town having a large temple within, the excavation revealed a 1.7 m. thick occupation overlying the natural sand. Several massive walls of laterite were exposed, one of which measuring 1.12 m. in breadth was traced to a length of 12 m. The structure-complex seems to belong to the temple. The occurrence in the lower-half of the deposit of the sturdy red ware, the Chinese Celadon Ware and Chola coins (pl. XXVI B) would date the site to the tenth-eleventh centuries A.D. The coins bear the familiar Chola characteristics, viz., the standing king on one side and the seated goddess on the other. Besides, hundreds of small earthen lamps were picked up from this site which might indicate that the venue was probably that of the temple, though this needs further confirmation. Another important find in this area was the outer wall of Madilakam, on the south extremity of the village. The wall was found to be running in the east-west direction and probably extended up to the backwaters on the east.

Shri K. V. Soundara Rajan, of the Southern Circle of the Survey, re-examined the already-recorded urn-burials at Nattika near Triprayar and found that the associated pottery consisted of the Russet-coated Painted Ware with wavy-line patterns, strikingly similar to the painted pottery found in the megalithic graves in District Coimbatore and, in the deposits of the early historical period on many sites in Tamil Nadu.

At Tirukkulasekharapuram, three trenches were laid out, two inside and one outside the temple, which architecturally can be dated to the tenth-eleventh centuries A.D. The excavation revealed a 70 cm. thick occupation-deposit inside the temple premises. The earliest layer yielded the usual red pottery and flat roof tiles, ascribable to the tenth century A.D. In the trench outside the temple two damaged laterite walls of the same period were unearthed.

At Tiruvanjikulam and Cheraman Parambu,' the excavations conducted around Balaganeswaram temple revealed early and late historical finds mixed together. These, however, included the fine red ware with a bright red slip, datable to the ninth-tenth century A.D.

19. EXPLORATION IN DISTRICTS MALAPPURAM AND PALGHAT — Shri K. Chandra-sekhara Menon of the Southern Circle of the Survey, during the course of an explora-

tion, located in District Malappuram: (i) rock-cut megalithic caves at Kaladi and Thara-nur; and (ii) *topikals* at Thavanur, and in District Palghat: (i) rock-cut megalithic caves at Karimba I; (ii) cairn-circles at Kavassery and Tarur; (iii) dolmens at Elavancherry and Pallasana; (iv) cist-burials at Eravattaparathy, Kuthanur II, Mundur II, Padupariya-ram I, Thenampathy and Valivallampathy; (v) about fifty urn-burials and dolmenoid-cists on the slope of a hill at Alathur; and (vi) mural paintings in the Tiruvalathur temple at Kodumba, Vishnu temple at Kollengoda II and Cherukannambra Siva Temple at Vadakkancherry I.

MADHYA PRADESH

20. EXPLORATION IN DISTRICT CHHATARPUR.—In the course of his exploration in the vicinity of Khajuraho, Shri Krishna Kumar of the Northern Circle of the Survey located a large number of ancient mounds, structural remains, water-reservoirs and wells around Bamanaura, Beniganj, Jatakara, Khajuraho and Sivapuri. The first three and the last-mentioned places are within a radius of 5 km. from Khajuraho. While most of the mounds mark Brahmanical and Jaina temple-sites, stylistically attributable to the Chandella period, some of them represent the ruins of various secular structures. The mounds reported by General Cunningham, as also some modern shrines which shelter many medieval sculptures, were also visited. Besides, numerous architectural remains, sculptures representing various Brahmanical as well as Saivite deities and *smarta-lingas* were also noticed.

The most important ruins were those of a medieval shrine, locally known as Chaura or Bavana-bhuja-vali-devi, situated on the northern terminal of Lavania Pahar to the south-west of Beniganj. It consists of the remains of a *mandapa.* The stone-ceiling, shows *gajatalu* and *kola*-mouldings, and the pillars are original while the walls, made of bricks, which seem to have been renovated later. Although the lintel over the entrance is embellished with the figures of the Brahmanical Trinity with Vishnu in the centre, a twenty-armed large image of Mahishasura-mardini with a group of attendant figures is enshrined in the temple. In spite of the fact that five arms of the deity are lost, icono-graphically, it is a rare cult-image of the Devi in the form of Chandika.

The remains of a medieval Jaina temple, situated over a gneissic outcrop on the south-west corner of the Nisoi-tala to the south-west of Sivapuri, were also examined. The extant lower courses of the *adhisthana* indicate that the plan of the temple resembled a Latin-cross. In addition to the heap of brick-bats and granite slabs, a number of architectural pieces, granite as well as in sandstone, were found scattered around the ruins. The different Jaina divinities and scenes relating to *thavana (sthapana)* were vari-ously carved in relief on four sides of the three square capitals.

21. EXPLORATION IN DISTRICTS MANDASOR, RAJGARH, SHAJAPUR, UJJAIN AND WEST NIMAR.—Shri V. S. Wakankar of the Vikram University of Ujjain, during the course of his exploration in District Mandasor, located an Early Stone Age site at Rampura, where-from a large number of tools were collected by him. The nearby nullah, called the Smashan nullah, showed a cemented gravel which yielded unifacial and bifacial pebble tools of large size. The cemented gravel was found to be resting over sandstone of the Vindhya series. In the same District, he also located two Chalcolithic sites at Jharda and Narayangad. Surface collections from the sites included: Kayatha Ware; white-painted

Black-and-red Ware of the Ahar fabric; black-painted red ware of the Malwa fabric; punch-marked and cast copper coins and sherds of the N.B.P. Ware.

In District Rajgarh, Shri Wakankar discovered over sixty painted rock-shelters at Katra Bihar, 14 km. east of Narsinghgarh. The paintings were found to be preserved in a few of the rock-shelters while in the remaining, mostly lying on the eastern side, they had either been white-washed or spoiled by smoke. The paintings include hunting and dancing scenes showing horse-riders, warriors with swords and shields. In one of the shelters, an outline of a *stupa* was found engraved in the rock surface.

In District Shajapur, Shri Wakankar, assisted by Shri Narayan Vyas, obtained several Early Stone Age pebble tools from the low hills near Amla in Tahsil Susner, and Late Stone Age tools from Nalkheda. Shri Wakankar also located four Chalcolithic sites at Badagaon, Sipawara, Soyat and Susner. Surface-Collections included Kayatha Ware, White-painted Black-and-red Ware of the Ahar fabric; the black-painted red ware of the Malwa fabric; and several punch-marked and cast copper coins.

In District Ujjain, Shri Wakankar, assisted by Sarvashri Narayan Vyas, M. L. Pandya and S. K. Arya, explored an ancient site at Dhangwade, situated on the Chambal. Besides pottery of the Malwa fabric, forty cast copper and punch-marked coins were recovered from the site.

In District West Nimar, Shri Wakankar located an Early Stone Age site at Khadi-ghat and obtained a large number of pebble tools from the exposed sections of the Nar-mada near the rail-bridge.

MAHARASHTRA

22. EXCAVATION AT CHIRKI NULLAH NEAR NEVASA, DISTRICT AHMADNAGAR.—In continuation of the previous year's work (*1968-69,* pp. 13-14), Drs. Z. D. Ansari and R. S. Pappu of the Deccan College Postgraduate and Research Institute, Pune, working under the general guidance of Prof. H. D. Sankalia, conducted a small-scale excavation at an Acheulian site of Chirki-Nevasa.

Earlier season's excavation had revealed the following stratigraphic sequence, from bottom upwards: rubble gravel, (0.70 to 1 m., in thickness) resting on the eroded uneven surface of basalt, yielding Acheulian tools like handaxes and cleavers, as also choppers, scrapers and hammerstones, almost in mint condition, sandy-pebbly gravel (1 to 6 m. in thickness), yielding mainly tools of Middle Stone Age industry, both rolled and unrolled, and a few tools of the Early Stone Age industry. No distinct non-conformity was observed between these two gravel-deposits. About 1800 tools had been collected from an exposed area of the rubble horizon, situated about 50 m. from the present bed of the river at a higher level of about 5 to 6 m.

This season's excavation had two objectives to realize: (i) to determine the limits of the artifact-bearing rubble horizon; and (ii) to locate the exact spots where the tools were actually manufactured.

The area selected for the excavation lies on the right bank of the Chirki Nullah at a distance of about 1 km., and at a height of about 15 to 20 m. from the present bed of the river. The outcrops of the country rock basalt occur at higher levels of about 15 to 20 m. from the present bed of the river and are overlain by a thin cover of alluvium (about 1 m.). This area has an appearance of bad-land topography and is characterized by numerous deeply eroded gullies which have not only cut into the alluvium but also in

the bed-rock below. A detailed exploration in these gullies yielded finished and unifinished tools with a fairly large number of waste-products.

Four trenches, measuring 3 X 3 m., were excavated in this area and the last season's stratigraphic sequence was confirmed. The rubble-gravel and the overlying sandy-pebbly-gravel were found to have a thickness varying respectively from 0-40 to 0-70 m. and 0-50 to 1 m. From the rubble horizon only, ten finished and unfinished tools were recovered. There was an increase in the number of waste products (about one hundred). A fossil-wood specimen probably, a *dicot,* was obtained from one of the rain-gullies.

This reason's work has thus shown that the rubble gravel of colluvial origin, representing Acheulian horizon, covers an area of about 1 to 2 sq. km. in this region, and is found to occur at various heights ranging from 5 to 20 m. Even though human activity was over a large area on the right bank of the Pravara, the main focus appears to be in the vicinity of the present cutting labelled Trench VII.

23. EXPLORATION IN DISTRICT BHANDARA.—In continuation of the earlier exploration in the Wainganga basin, a portion of this river and its tributaries was examined by Dr. R. V. Joshi of the Prehistory Branch of the Survey. About 100 to 150 m. from Sulaiman Tekri, the *stupa-site* at Pauni, he noticed a section (pi. XXVII A) in the adjoining nullah on the right bank. From the water-level upwards it consisted of (i) shales, (ii) yellow gravelly-clay, (iii) dark-brown lateritic hard-pan, (iv) pisolitic laterite gravel and (v) a thin layer of the brownish-yellow soil. Early Stone Age tools (fig. 7) were obtained from the basal yellowish gravelly clay. Such tools were found in large numbers in the same eroded deposit in the gullies near Nimthara area in the east.

In the vicinity of the Shelari Maruti Temple, a trench was laid out in the lateritic red clay-deposit (pi. XXVII B). Up to the depth of 45 cm., microliths (fig. 6)

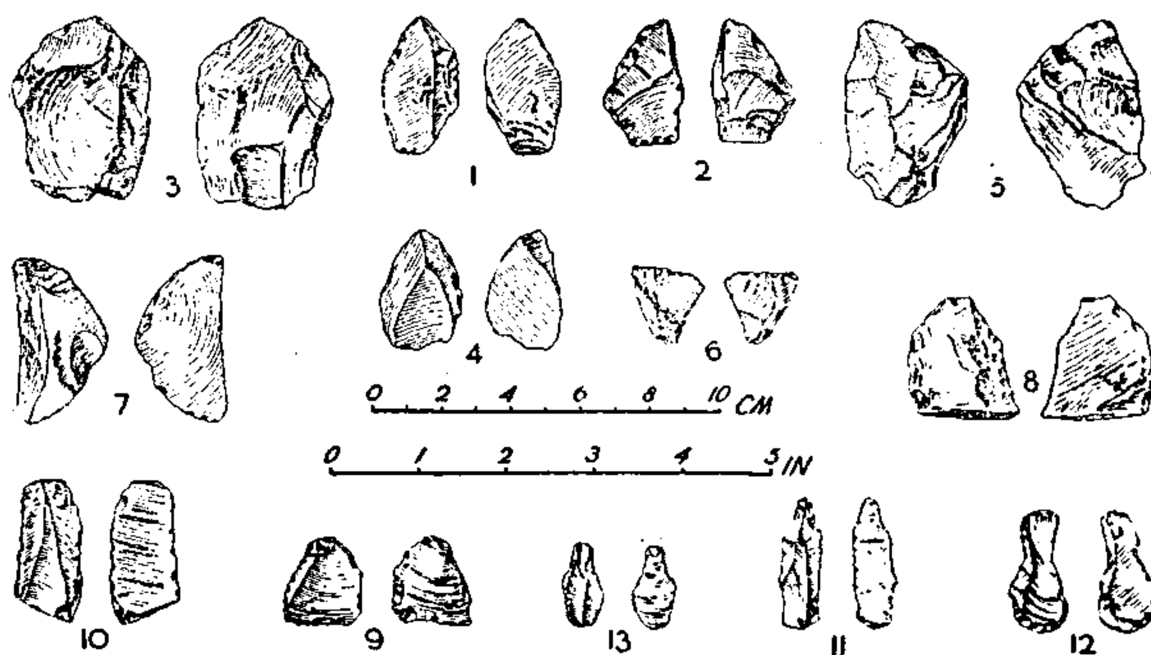


Fig. 6

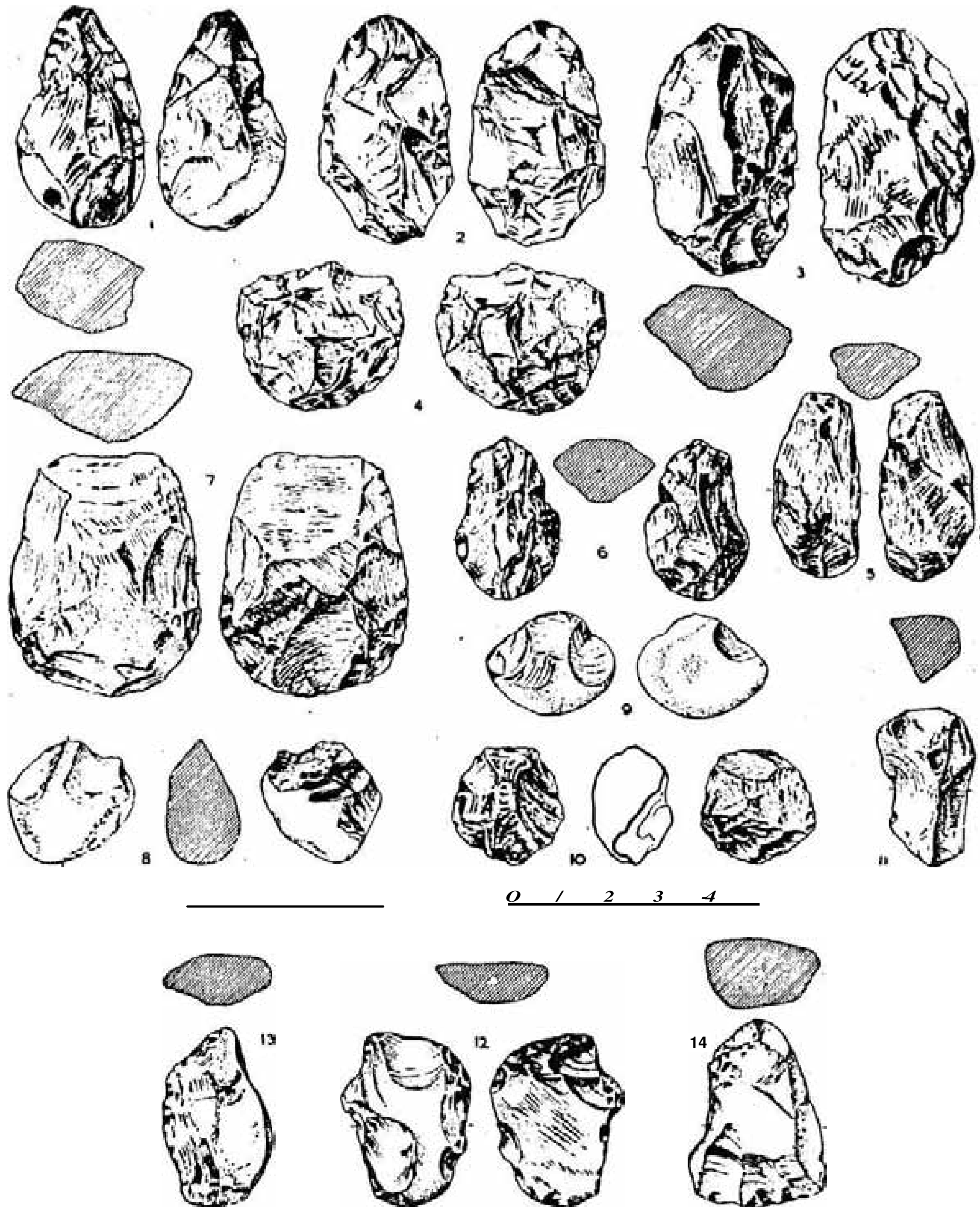


Fig. 7

on chalcedony group of minerals were obtained. No other objects were found with the microliths. Below this level was the sterile lateritic deposit.

In the course of exploration on the Wainganga river around Pauni, a few cliff-sections showed coarse pebbly-gravel overlain by a thick silt-deposit. The gravel yielded Middle Stone Age tools (fig. 6). A few microliths were found in the overlying silt. No Early Stone Age tools were found in the river-sections.

Prof." S. B. Deo of the Nagpur University noticed a number of stone sculptures of Brahmanical deities ascribable to the eleventh-twelfth century A.D., near the Ghoda Ghat area.

On the left bank of the Wainganga, opposite Pauni, he collected sherds of black-and-red and black-painted red wares of the Kushan idiom and Kshatrapa coins.

24. EXPLORATION IN DISTRICTS BHANDARA AND NAGPUR.—Shri K. D. Kawadkar of the Department of Archaeology, Government of Maharashtra, explored an ancient site at Ramtola, 10 km. west of Goregaon in Taluk Gondia. The Contour Bunding Branch of the State Agriculture Department had excavated a number of trenches at the site, as a result of which various finds had been dug up. Among these, mention may be made of sherds of the Red Polished Ware and stone images of Mother Goddess, carved in low relief on rectangular stone plates. On the evidence of pottery and other finds, the site is assignable to the early centuries of the Christian era.

In District Nagpur, Shri Kawadkar explored an ancient site at Mandhal in Taluk Umrer. Although the site was quite an extensive one, three areas seemed to be more potential: (i) in the vicinity of the Rashtriya Vidyalaya: (ii) at Kalyan Hudaki, nearly 2 km. from the village; (iii) in the vicinity of the tank known as Varadi talav. Surface collection from the site included non-descript pottery of red and black-slipped wares and brick-bats. A noteworthy find, however, was a naked Mother Goddess with spread out thighs possiblly representing fertility cult. The figure has some unique features in its having attendants.

25. EXCAVATION AT PAUNI, DISTRICT BHANDARA.—In continuation of the last season's work (*1968-69,* pp. 14-16) excavation was taken up this year at the mounds locally known as Chandakapur and Hardolala Tekri. The work, as in the previous season, was directed jointly by Prof. S. B. Deo of the Nagpur University and Shri J. P. Joshi of the Excavations Branch of the Survey. They were assisted respectively by Dr. A. M. Shastri, and Sarvashri G. B. Deglukar, A. P. Jamkhedkar and O. P. Verma of the University and by Sarvashri K. Krishnamurthy, Arun Kumar, C. Margabandhu, I. K. Sharma, J. P. Srivastava and K. Raghavachari of the Survey.

The Chandakapur mound, also known as Sulaiman Tekri, is located about 600 m. south of Jagannath Tekri which was excavated last year. On excavation, the former mound was found to contain remains of a huge *stupa* (pl. XXVIII), built of baked and mud-bricks, rising to an extant height of 7.37 m. Over a prepared foundation of very compact greenish clay (pl. XXXI), the *stupa* was built in receding tiers. The first tier was 41.6 m. in diameter and 1.5 m. in height, showing eight basal courses of baked-bricks (size: 55 X 37 X 7 cm.) and twelve courses of same-sized mud-bricks. This tier was not absolutely vertical but was built to an angle so as to form the profile of the *stupa.* The last course of mud-bricks was capped by a baked-brick course (pl. XXIX). In all, five such tiers, each with similar masonry of baked- and mud-bricks were encountered. The number of courses and consequently the height, however, varied with each tier. A

thin spread of fine sand was sometimes found laid between the courses of mud-bricks. The mortar used was compact brown clay.'

The *stupa* seems to have been renovated at least on two occasions, as evidenced by (a) the irregular replacement of baked-bricks by mud-bricks, disturbing the pattern or the masonry, and (b) the repairs to the third tier.

As the *stupa* was situated near a nullah which even now swells devastatingly, the basal portion of the *stupa,* being susceptible to erosion, was strengthened by constructing a 9.6 m. wide revetment (pl. XXX) in two stages. The revetment was built entirely of baked-bricks. These were laid at an angle of 39° resulting in a dome-shaped profile. In the course of time, a 1.2 m. wide *pradakshina-patha* of baked-bricks, encircling the outer periphery of the revetment, was added to the *stupa.*

A 10 m. square shaft was sunk at the centre of the *stupa* right up to the base. At a depth of about 5.9 m. from the top was found a wooden post, embedded in eleven courses of mud-bricks which formed a square *kunda* with indented courses on plan. The *kunda* contained a globular pot of micaceous red ware, showing paintings in dull-black over the neck and belly portions. Within the pot were seen a few bone fragments, including perhaps a molar-piece. The enshrining of the relics in a painted pot is a novel feature of the *stupa.*

No sculptures or remains of any railing or gateway were available. This *stupa* thus appeared to be severely plain as compared to that excavated last year at the Jagannatha Tekri.

The ceramics associated with the *stupa-complex* consisted of a doubtful sherd of the N.B.P. Ware and abundant quantities of red-slipped, micaceous red, black-painted red, and coarse red wares. The painted ware showed affinities with that of the Kushan-Kshatrapa period.

The numismatic evidence comprised coins of the Satavahana king Satakarni and those of the Kshatrapas. The coins of Satakarni belong to an entirely new type and palaeographically can be assigned to *circa* first-second century B.C. The *stupa* can thus be ascribed to *circa* first century B.C.—second century A.D., comparable to phase III of the Jagannatha Tekri.

About 440 m. due, north-west of the town of Pauni lies another mound, known locally as Hardolala Tekri, which rises to a height of about 8 m. above the surrounding plain. The find of brick fragments in the nearby fields, and the reported discovery, some years ago, of an inscription of king Bhagadatta of the Bhara clan (*circa* first century A.D.), from this locality, indicated possibilities of the existence of a *stupa* here.

The excavation, however, belied these expectations. Excepting a few decorated stone fragments of early medieval period, no structural remains were met with here. It is likely that in the medieval times some sort of a watch-tower was erected here by heaping different varieties of earth and *murum.*

26. EXCAVATION AT KANHERI, DISTRICT BOMBAY SUBURBAN.—Kanheri, situated 35 km. north of Bombay, is known for its numerous rock-cut caves. With a view to ascertaining the period of occupation of the caves and the purpose of building the retaining walls along the edge of the verandah, the South-western Circle of the Survey, under Shri S. R. Rao, assisted by Shri Narayan Babu, undertook an excavation in Cave No. 25. A trench, measuring 14 X 4 m., with its longer axis running parallel to the outer wall of the cells, was laid out (pl. XXXII).

The excavation revealed three occupation-levels. In the earliest phase, the Cave

was approached through a flight of rock-cut steps (pi. XXXIII A) at the western end. In the middle phase, a rubble masonry wall was constructed across the top-most rock-cut step. This phase was associated with the building of furnaces (pi. XXXIII B) in the verandah and can be dated by the ceramic, numismatic and palaeographic evidences. An inscribed potsherd (pi. XXXIV A), reading *Arhadissa ghatah,* found in a layer which seals two furnaces, is assignable*lo the fifth century A.D. The same deposit also yielded a circular lead coin of Nahapana and sherds of the Red Polished Ware. The masonry wall separates the occupation-deposits of the middle phase in the central and eastern sectors from that of the late phase in the western. Owing to extensive weathering of the rock, the walls of cells at the western end had collapsed by sixth-seventh centuries A.D.

The last phase of occupation yielded twenty-four clay sealings (pi. XXXIVB) of the Nalanda type showing Buddha seated in *bhumisparsa mudra* with the usual Buddhist philosophical formula *ye dharma maha sramanah* inscribed in characters of the eight-ninth centuries A.D. The phase may have come to an end around tenth century A.D. The other finds obtained from the excavation included fragments of glass bangles, a rectangular terracotta frame perhaps used for keeping the sealings during worship and a circular copper disc perforated in the centre.

The excavation has, for the first time, furnished tangible evidence, in the form of iron ore, furnaces, crucibles and slag, to prove that the large number of Buddhist monks living in the Kanheri caves did not confine themselves only to religious preachings but were also engaged in commercial activity, such as fashioning of metal objects. Secondly, the location of important centres of Buddhism on trade-routes can be more satisfactorily explained if it is remembered that these were also centres of trade and industry. Kanheri lies close to two important routes, one connecting Kalyan with Amaravati *via* Paithan and the other connecting Bharuch with Varanasi and Bodh Gaya *via* Mathura, Ujjayini and Nasik.

27. EXPLORATION IN DISTRICTS BULDANA AND RATNAGIRL—The Department of Archaeology, Government of Maharashtra, explored the ancient mound at Maule Bhastan in Taluk Khamgar and found beads of various materials and other antiquities belonging to the Mauryan period.

In District Ratnagiri, sculptures of Jain Tirthankaras were found at Mauja Pandur.

28. EXPLORATION IN DISTRICT CHANDA.—Shri D. Hanumantharao, of the South eastern Circle of the Survey, explored the region near Suknur in Taluk Chanda. On the right bank of the Bhimkund nullah, a tributary of the river Wardha, he noticed patinated handaxes and cleavers on a pebbly bed.

At Nandagaon, in the same Taluk, he found a Middle Stone Age site on the left bank of Tigelavagu, a tributary of the Wardha river.

Shri B. K. Sinha of the same office, located four Late Stone Age sites at Bothli Madia, Dongar Saongi, Serpar and Wardha in Taluk Garhchiroli. The tools were mostly of chert and included parallel-sided blades and fluted cores.

Shri K. Venkateswararao of the same office, located a Late Stone Age site at Deo-$_4$ ghat in Taluk Rajura. The tools were made of chalcedony and jasper and included fluted cores and flakes.

29. EXPLORATION IN DISTRICT DHULE.—Shri S. A. Sali, of the South-western Circle of the Survey, in the course of his exploration in the District, found Middle Stone Age

tools of red basalt and of jasper at Sula and Late Stone Age tools, chiefly of chalcedony, at Babhlaj, Hadakhed and Sula.

With a view to checking the effects of last year's excessive floods, a portion of the Kan river, a tributary of the river Panjhra in the Tapti basin, was re-explored by Dr. R. V. Joshi and Shri S. A. Sali, respectively of the Prehistory Branch and the South-western Circle of the. Survey. New sections were exposed on the Yesar village site, on the left bank of the Kan, opposite Bhadne. A large number of Early Stone Age artefacts, made of the Deccan trap, were collected from the site. The tools were found to be generally weathered,

30. EXPLORATION IN DISTRICT JALGAON.—Shri S. A. Sali, of the South-western Circle of the Survey, surveyed the area likely to be submerged under water as a result of the irrigation dam at the confluence of Dongari and Kedar nullah. During the course of his exploration, he discovered an Acheulian handaxe in basalt at Chang Dev (Manegaon) and other Early Stone Age tools from a gravel-deposit near Patna and Middle and Late Stone Age tools from the gravels in the nearby areas. An early historical site, yielding black-and-red ware, was located at Hankari.

31. EXPLORATION IN DISTRICT KOLABA.—Dr. R. V. Joshi and Shri B. P. Bopardikar of the Prehistory Branch and Shri G. V. Vidhvans of the South-western Circle of the Survey, explored the Gandhari river between Pachad and Mahad, and found near the village Koturde a few unifacial choppers on trap pebbles, one or two points of Middle Stone Age type made of chert, and a few microliths. The river-sections showed thick pebble-bed, consisting mostly of colluvial material resting on the rock and overlain by red clay of lateritic origin. The fields in the adjoining villages are littered with nodules of secondary minerals like chert, carnelian, chalcedony, agate, etc., amongst which were found a few microlithic flakes, blades and cores. At Pachad, a unifacial chopper was found on the surface on the ground adjoining the village.

32. EXCAVATION AT PACHAD, DISTRICT KOLABA.—Dr. R. V. Joshi and Shri B. P. Bopardikar of the Prehistory Branch of the Survey and Shri G. V. Vidhvans of the South western Circle of the Survey, examined the natural cave at the foot of Raigarh Fort. The cave had been noticed earlier by Shri Vidhvans in 1954 when he had made a collection of microliths from the surface-deposit inside the cave.

Situated about 22 km. from Mahad, and just above the village Pachad, the cave (pi. XXXV) is formed in the volcanic Deccan trap of the area. It lies about 450 m. above mean sea level and is approachable only from the northern scarp of the ridge in which it is located. On the southern steep face, it shows two, more or less circular, openings. Inside, it measures nearly 10 X 10 m. Two trial trenches were dug in the cave to ascertain the occupational deposit. One small trench was taken at the northern entrance and the other inside the cave towards the eastern end.

The section in the inner trench revealed a 5 cm. thick brown loose dust on the surface, underlain by a 15 cm. thick light or ashy earth, below which was rock-rubble mixed with brown earth. The maximum depth reached in this trench was 1-5 m. The microlith-bearing deposit was found to be disturbed by a late (modern ?) pit which contained a perforated terracotta disc, little charcoal, and pottery. The microliths (pi. XXXVI) appear to be of finer variety consisting of short blades, occasionally retouched, but mainly plain, points and a few blade-cores. Associated with them were

found a few small bone pieces and pottery fragments, the exact nature of which remains to be still investigated. The cave-deposit is made up of fallen rock fragments and a fair amount of wind-blown dust from the plateau-surfaces below, on which are situated modern villages like Pachad.

At Charai, about 3 km. from Poladpur towards Mahad, the section on the left bank of the Savitri river showed a 3 m. rock cutting at one locality.

At the other locality, the sequence of deposits from the basal rock upwards was as follows: 1 m. thick pebble-bed; red, fine clay which itself was partially eroded and gullied, and formed low slopes; 50 cm. thick pebble-bed and 50 cm. thick red clay. Several microlithic cores, flakes and blades on chalcedony, etc., were found in the shallow gullies cut in the red clay resting on the basal pebble-bed. From the left bank terrace, two unifacial-choppers on trap were collected.

Near the villages Turmbhe, Rajvadi, and Kamble, on the same river, unifacial-choppers were obtained.

The unifacial-choppers, found at different localities, seem to represent Early Stone Age industry of the area. No handaxe facies were found anywhere in the area.

33. EXPLORATION IN DISTRICT NAGPUR.—A portion of the Pench river, a tributary of the Kanhan, was explored by Dr. R. V. Joshi, and Shri B. P. Bopardikar, of the Pre history Branch of the Survey. Shri S. D. Kulkarni, Superintending Engineer, and Shri Nawathe, Executive Engineer, Irrigation Division of Maharashtra, Public Works Depart ment, also accompanied them at Newegaon (Kheri). In the dug-out trench across the river, the section near the river-bank showed, from bottom upwards; a coarse-red sandy gravel interspread with a few quartz and quartzite pebbles; a thin silty layer and a gravelly rubble. The last-mentioned deposit yielded Middle Stone Age tools (pl. XXXVII). At the same site, slightly away from the left bank, was observed a surface of silt and sand (perhaps old levies), on which were found microliths.

34. EXPLORATION IN DISTRICT NASIK.—The Godavari and its tributary, the Kadva, were re-examined at Gangapur near Nasik and Nandur-Madhmeshwar near Niphad by Dr. R. V. Joshi and Shri S. A. Sali, respectively of the Prehistory Branch and the South western Circle of the Survey. The high floods of last year were found to have caused considerable erosion of the Stone Age tool-bearing sections at both these localities.

At Gangapur, a fresh collection of Early Stone Age tools, mostly cleavers, was made. About 100 m. downstream from the weir, on the left bank of the Godavari, a fine section had been exposed at Nandur-Madhmeshwar. From it a collection of fossils of *Bos* was made along with a few fresh Middle Stone Age tools. Both were found *in situ.* It may be recalled that from the site at Gangapur mandible of *Bos namadicus* along with the Early Stone Age tools had been collected earlier by the same party. No Middle Stone Age tools were, however, found at this site. This year's fossil find at Nandur-Madhmeshwar is in association with the Middle Stone Age tools and here again no tool of Early Stone Age was found in the same deposit. An intensive investigation at these localities may help us to resolve the question regarding the geological time-range of the occurrence of *Bos* in the stratified Stone Age deposits.

35. EXPLORATION IN DISTRICT PUNE— Shri S. A. Sali of the South-western Circle of the Survey, during the course of his exploration in the submergence area of the Nira valley, collected an Early Stone Age scraper at Shirgaon. At Bhor, Middle Stone

Age tools of chalcedony, agate and jasper were collected. He also discovered Late Stone Age sites at Bhavekal, Hirdoshi, Nandgaon, Nigudghar, Shirgaon and Venupuri.

36. EXPLORATION IN DISTRICTS PUNE AND RATNAGIRI — In the course of exploration in Taluk Maval, Dr. (Mrs.) Shobhana Gokhale of the Deccan College Postgraduate and Research Institute, Pune, assisted by Shri C. G. Padval, discovered early caves at Karanjgaon and Kamra. At Tikona, with the assistance of Shri P. R. Kulkarni, she discovered a new *vihara* datable to *circa* seventh-eighth centuries A.D. The *vihara* was found filled with debris.

In District Ratnagiri, Shri Annasaheb Shrigaonkar, Upasabhapati, Dapoli Taluk Panchayat Samiti, brought to her notice a set of copper-plate inscriptions of the North Silahara king Aparaditya I, dated Saka 1061. The record reveals the existence of the prince Vikramaditya, son of Aparaditya, who was so far unknown in the history of the Silaharas of north Konkan.

The copper plates were initially in the possession of Shri Kesava Pandurang Jadhava of Panhale, Taluka Dapoli who had later handed them over to Shri Shrigaonkar.

37. EXCAVATION AT INAMGAON, DISTRICT PUNE.—In continuation of the previous year's work (*1968-69,* pp. 18-20), excavation was resumed at Inamgaon by the Deccan College Postgraduate and Research Institute, Pune. The work was directed by Dr. Z. D. Ansari and Dr. M. K. Dhavalikar, working under the general guidance of Prof. H. D. Sankalia. They were assisted by Sarvashri M. G. Abhyankar. A. A. Dalvi, S. K. Kulkarni, V. K. Nagpure, Y. S. Rasar, R. B. Sapre and R. B. Warke. The objectives of this season's work were to expose more structures of the late Northern Deccan Chalcolithic Culture brought to light for the first time at this site. It may be recalled that last year about twenty-five houses were exposed. During the current field season thirteen more have been excavated.

The houses were circular on plan (pl. XXXVIII) and had dwarf walls. The roof, probably conical, seems to have been supported by a number of wooden posts (pl. XXXIX). The house-floors were composed of cowdung and lime; the walls were made of reed-screens plastered over with mud. Impression of such reed-screens besides a few charred pieces of reeds, were found in the excavations. It is likely that *kavli* plant may have been used for making screens, as used even now. For roofs, the elephant grass, which is known to be water-proof, seems to have been used.

Within one of the houses was found an oval-shaped *chulah,* by the side of which were the ubiquitous four flat' stones which served as supports for the storage bins. A few leg fragments of huge storage-jars, recalling the four-legged iars from the megalithic tombs in south India, were also found. However, it seems very likely that the storage bin is identical with that in use today in some parts of Maharashtra where it is locally known as *kanig*. These modern bins are rectangular on plan and are built of unbaked clay. These have four legs which rest on four flat stones.

The average diameter of the houses ranged between 2 and 2 1/2 m., the biggest, however, measuring 4.30 m. The latter was surrounded by sixteen post-holes. Chunks of mud-bearing reed impressions were found in the collapsed debris of this house. Two sets of four mud-lumps for supporting storage bins were also noticed on the floor which seems to have been repaired thrice. This house also yielded a few charred grains. An important feature of this house was its delimited plan during the later occupation.

The associated pottery was coarse in fabric and bore painted designs in black over

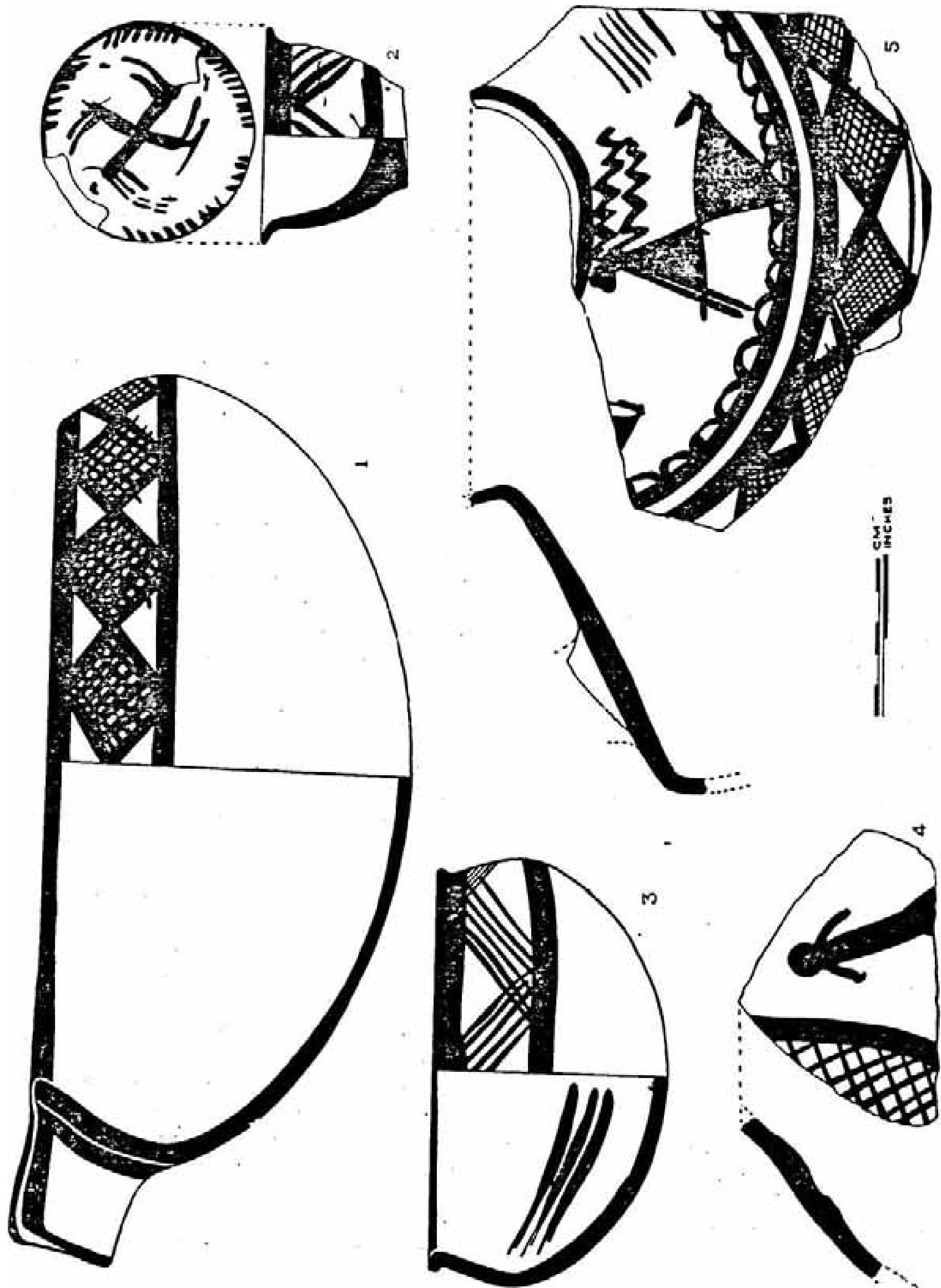


Fig. 8

a wash of orange- or light-red. The painted patterns (fig. 8) were mostly geometrical including the *svastika.* Mention may also be made of a sherd painted with an abstract human figure and a vessel painted with a stylized deer. Among the shapes, the more noteworthy were (i) the convex-sided bowl and (ii) the channel-spouted bowl. Besides, high-necked jars, typical of the Jorwe ware, were also found. Associated with this pottery was the grey ware, distinctive of the Southern Neolithic Culture and the handmade ware, occasionally decorated with applique and incised patterns. The black-and-red ware appeared only in the late phase of the occupation, indicating that, during this phase, the inhabitants had cultural contacts with the megalith-builders of the south.

The other finds included: blade-flakes of siliceous material; polished stone axes, fish hooks, a poker and a small pan of copper; objects of bone and antler; clay figurines, possibly of a deity; a potter's dabber; terracotta bulls and a wheel; and beads of semi-precious stones, ivory, shell, including a barrel-shaped one of gold. It seems likely that gold was imported from Mysore.

A distinguishing feature of the late phase of the occupation were the burials which were found in the habitation-area itself. Children were buried in urns; two urns of grey-ware were placed horizontally mouth-to-mouth in a pit, usually in the north-south direction. Along with the dead body, funerary material, usually a bowl and a spouted vase, was also deposited in the grave. In a couple of cases, a few animal bones were also found. Adults were buried in an extended position in the grave-pits in north-south orientation. In this mode of burial also, a few pots were deposited along with the dead body. In one of the burials of this class, two bowls of black-and-red ware were found.

A special attempt was made to recover pottery from each house separately so as to form an idea of the family unit. The number of vessels found in House No. 36, which incidentally was the largest house recovered so far, was as follows: (i) black-painted red ware of the Jorwe fabric, convex-sided bowls of various sizes, 31, channel spouted bowls, 8, concave-sided bowls, 1, high-necked jars (big), 2, high necked jars (small), 4, globular jars with constricted neck, 6, pot with tubular spout, 1, small *lota* with blunt carination, 1; (ii) black-and-red ware, bowls, 2; (iii) coarse red grey ware jars, 23, *kundas* (small and big), 10, skin rubbers, 10.

A casual glance at the distribution above would show that it was a fairly large family, although it may not be possible, at this stage, to define the exact number of members of the family. Significantly enough, no dish was found from this house. This is indicative of the peculiar food habits of the people.

On the basis of a single radiocarbon date, 940 ± 170 B.C. for layer 5, which represents the beginning of the late phase, the occupation of the site may be placed between *c.* 1000 and 700 B.C.

38. EXCAVATION AT THEUR, DISTRICT- PUNE.—The South-western Circle of the Survey undertook excavation at Theur, situated on the Mula-Mutha river, 24 km. north of Pune. The work was directed by Shri S. R. Rao, assisted by Sarvashri K. M. Srivas-tava, P. Narayan Babu and A. Sundara. The distinctive feature of the site was the existence of stone-circles, varying in diameter, from 18 to 28 m., and the occurrence on the surface, of black-painted.red and black-and-red wares and parallel-sided blades of chalcedony, indicating thereby chalcolithic affiliations. Five stone-circles were located in Site 1 (pl. XL A),.situated at a distance of nearly 1 km. from the right bank of the river on the Theur-Naigaon road. Of these, two such circles, labelled 1 and 4, were taken

up for excavation (pl. XL B). A 4 m. high mound of the same cultural affiliation, designated as Site 2, lies on the left bank.

The excavation revealed that these stone-circles were not funerary monuments of the iron-using megalithic people but were circular huts of the chalcolithic period. In Circle 1, three structural phases could be distinguished. In the earliest phase, the houses were rectangular on plan (pl. XLI A) with the walls made of mud and the doors hinging on stone sockets. The floor was made up of *pise*.

A solitary burial in a double pot (pl. XLII A), noticed in the courtyard of the rectangular mud-house of the earliest phase, throws some light on the mode of the disposal of the dead. Unlike the burial urns at Nevasa, Chandoli and Daimabad, the burial urns at Theur were of red ware having bulbous body and round bottom. The black-and-red ware, found in abundance throughout the occupation of the site, was not used for funerary purposes. In the second phase, the houses continued to be made of mud or wattle-and-daub but the floors were composed of well-rammed *murum* plastered over with mud. Remains of storage bins (pl. XLI B), which were either circular or rectangular on plan, were also recovered. In the third phase, the walls of the houses had rubble footings and the floors showed lumps of black clay pressed over *murum. A* circular hearth, 30 cm. in diameter, was also found.

The group of huts was enclosed by large boulders laid in one or two concentric circles mainly to arrest erosion by water. In the outer row of stones, which, however, is considerably disturbed, the boulders were erected vertically to attain a certain height and were filled in with *murum* and capped by one or two courses of rubble.

Among the finds, mention may be made of saddle-querns, pounders and mullers of trap, stag-horns and a large number of cores, parallel-sided flakes, and waste flakes (pl. XLIII). The personal ornaments of the inhabitants consisted of (i) copper bangles of circular or rectangular section, (ii) beads of jasper, chert, shell and agate, (iii) terracotta figurines of bull and (iv) toy-cart wheels. The occurrence of a fragmentary polished stone axe and vessels of burnished grey ware suggest contact with the neolithic culture of the upper Krishna valley.

The main ceramics of the inhabitants consisted of the black-and-red, black, coarse grey, sturdy red and coarse red wares, the last two being painted in black, chocolate or pink over a dull-red slip. During the first two phases, the painted pottery was found to be more prolific. Likewise, the fabric of the black-and-red ware became coarser in the third phase.

The black-and-red ware accounts for nearly 40 per cent of the total pottery obtained from the excavated area. Usually of thin fabric, it is well-fired and has a smooth shining surface, resembling that obtained in Rangpur II C and III. Some of the shapes were found to be identical with those of the Lustrous Red Ware and the associated black-and-red ware of Saurashtra. Particular mention may be made of the stemmed bowl or the chalice and the carinated bowls. Both these types invariably bear, on the interior, certain graffiti marks (pl. XLII B) which were deeply incised before firing. As many as sixteen linear signs, evolved from the Indus script of the mature Harappa phase, have been recognized. The painted designs (pl. XLIV A and XLIV B) were almost elementary and included horizontal bands, rows of hatched diamonds, oblique lines drawn in groups, suspended loops, stylized ear of corn, alternatively hatched squares and occasionally the Svastika-pattern. Corrugated bowls in black ware were fairly common throughout the occupation.

The above evidence clearly indicates that the earliest occupation at Theur began

around *circa* 1500 B.C., and continued up to *circa* 1200 B.C., if not slightly later, as suggested by the occurrence of the sherds of the Jorwe Ware in the third phase.

39. EXPLORATION IN DISTRICT RATNAGIRI.—Dr. R. V. Joshi, assisted by Shri B. P. Bopardikar of the Prehistory Branch of the Survey, undertook prehistoric exploration in the part of Konkan.

The chief geological formations of the area are Deccan trap and the laterites. But in some places, like the one near the village Vatul on the Rajpur road from Ratnagiri, extensive outcrops of the quartzites and sandstones of the Kaladgi Series were found to occur which seem to be suitable localities for prehistoric investigations. At Vatul, this sedimentary rock is being quarried and powdered for moulding sand. A short survey of the area yielded a bifacially-worked discoid on quartzite. The locality, therefore, seems to be quite promising for the Early Stone Age sites.

On the National Highway, about 16 km. from Ratnagiri, on the left side of the road, near Hathkamba, are the natural caverns and rock-shelters, formed in the laterite. There are two or three shallow rock-projections on either side of the main cave. The central cave measures about 2 m. at the entrance with its inner dimensions being approximately 5 X 5 m. Further inside, it narrows into a shallow gallery which could not be penetrated. It has a natural opening on the roof, the latter merging with the low hill above.

At the entrance and in the centre of the front hall, the deposit was found to be at least 1 to 1.5 m. in thickness, of light-brown earth, which was hardened at places. On the front slope, extending upto the road, was the rubble with laterite blocks. On the surface of this talus were found microliths (pl. XXXVI) on chalcedony and quartz. Such secondary minerals were noticed only here and were not seen on the adjoining hill and the gullies. Evidently, this raw material seems to have been brought by the tool-makers from some distant place. The microliths generally show cruder forms of blades and points. No pottery or other antiquities were found on the surface.

On way to Pavas by the newly-constructed road from Ratnagiri on the Kajvi river near Harchiri village, a unifacial chopper was obtained from the cliff-section.

MYSORE

40. EXPLORATION IN DISTRICTS BELGAUM AND DHARWAR.—Shri A. Sundara, of the South-western Circle of the Survey, during the course of his exploration in the submergence area of the Naviltirth irrigational dam in District Belgaum, discovered Middle and Late Stone Age sites at Suravvakolla near Sureban.

In District Dharwar, he discovered neolithic sites in the Malaprabha valley at Benkankop and Surkod.

41. EXPLORATION IN DISTRICT KOLAR.—During the course of an exploration in the District, the Department of Archaeology of the Government of Mysore located: (i) a neolithic site at Sulikunte; (ii) a number of megalithic burials at Akahintala-gollahalli, Chakranahalli, Desihalli, Devanganahalli, Kadirenahalli, Karamangala, Kerabele, Maragullu, Mugalabele, Soregowdanahalli, Sulikunte, Thyaranahalli and Varadapura in Taluk Bangarpet; and (iii) a few inscriptions of Ganga and Hoyasala periods (tenth and twelfth centuries A.D.) at Yelaburgi in Taluk Bangarpet and Ramapatna and Uduvepura in Taluk Hansur.

NORTH EAST FRONTIER AGENCY

42. EXPLORATION IN DISTRICT LOHIT.—The Geological Survey led a joint scientific expedition in the Daphabum area in collaboration with the Anthropological, Archaeological, Botanical and Zoological Surveys.

The Archaeological Survey was represented by Shri B. P. Bopardikar of the Pre-history Branch. As this area was never explored archaeologically, its potential was not known. Besides, it was necessary to understand the glacial morphology of this area with a view to comparing it with that of the recently explored areas in the Beas basin where environmental and Stone Age cultural studies are under investigation.

The area explored along Kamlang, Lati and Telly (Lohit) rivers, lies between 27° 45' and 28° 15' N. Lat. and 96° and 97° E. Long, (roughly 300 km. in length) with an altitude ranging between 180 and 3350 m. above mean sea level. The entire region lies in a heavy rainfall zone with densely forested mountains. Geologically, the area is covered mainly by the Archaean formations, having a general NW-SE trend, all showing intense folding and faulting.

During the expedition, Stone Age sites were noticed for the first time on the high terraces between 914.4 m.-1219.50 m. levels at Chamba, Glow, Kale and Teehun. Since the terraces were covered with dense vegetation, the natural section and tool-bearing deposits were rare. The artifacts were obtained from small patches of *Jhum* cultivated fields on the slopes. The tools are highly rolled and weathered and are made of the common rock types of the area, viz., metamorphic rocks, such as meta-dolerite, gneisses and schists. The tools (pl. XLV A and XLV B) comprise choppers, a proto-handaxe, cleavers, scrapers, flakes and cores. A few neolithic implements were also found, amongst which was a shouldered celt.

In the lower middle reaches of the Kamlang Valley, three terrace-levels were noticed. They were also seen around Chakhro, Glow, Kale, Teehun and Wakro and in the upper reaches of the river. These terraces appear to have been formed by tectonic movements.

Similar terraces were also seen in the Telly valley (Lohit River), Chulum Pass and Lati rivers. A typical section (pl. XLVI) of the high-level terraces can be seen near Hayu-liang (Tawling). A unifacial chopper and a flake, found in the lower terraces here, recalls a similar unifacial chopper found on the quartzite in the Kangra Valley (Himachal Pradesh).

ORISSA

43. EXPLORATION IN DISTRICTS SAMBALPUR AND SUNDARGARH.—During the course of exploration in the Districts, the Department of Archaeology and Museums, Govern ment of Orissa, located: (i) painted rock-shelters at Ullaphgarh and Vikramkhol in District Sambalpur, respectively 8 km. north and 13 km. south-west of Belpahar Railway Station, and at Usha-kothi in District Sundargarh; and (ii) early medieval forts at Belsaragarh, Jamsaragarh and Junagarh in District Sundargarh.

PUNJAB ,

44. EXPLORATION IN DISTRICT HOSHIARPUR— Shri Devendra Handa explored the following sites in the District.

Ajaram, situated about 12 km. south-west of Hoshiarpur, yielded black-slipped, black-and-red, black-painted red, stamped and medieval wares, and coins of Taxila, lndo-Greeks, Kushans and Kangra kings. As indicated by two layers of ashy material, seen in all the exposed sections of the mound at different places, the city seems to have been burnt successively by the Huns and the Muslims.

Dholbaha, situated about 25 km. north of Hoshiarpur on the banks of a mountain-brook at the toot of the Siwahks, yielded pointed-butt variety of celts, suggestive of a neolithic settlement here.

Rajini Devi, situated about 12 km. south-east of Hoshiarpur, yielded grey ware without paintings, plain red and black-painted red wares, of the early historical period, medieval pottery, terracotta figurines, broken sculptures and coins. The name suggests that the place was probably a stronghold of the Rajanyas whose coins have been found in abundance in District Hoshiarpur.

Zahura, situated about 5 km. south-west of Tanda Urunur yielded black-slipped, black-painted red, plain red and Red Polished Wares of the early historic period and the pre-Moghul Glazed Ware. The ancient site contains the ruins of a citadel with four bastions on its four corners and a moat with the main approach from the northern side. The village elders attribute the citadel to the Sikh period. It is reported that a beautiful Gupta sandstone sculpture of Buddha, about 30 cm. in height, and two early medieval four-handed Mahishasuramaraini figures, nearly 60 cm. in height were found by the villagers while ploughing their fields on the mound. These are now lying in a temple to the north of the village which, according to a local legend, marks the site of the sacred fire-altar of Janamejaya Parikshit's serpent-sacrifice.

45. EXCAVATION AT SANGHOL, DISTRICT LUDHIANA.—In continuation of the previous year's work (*1968-69,* pp. 25-26), the Department of Archaeology and Museums, Government of Punjab, under Shri S. S. Talwar, assisted by Shri R. S. Bisht, resumed excavation at Sanghol. The primary objective of this season's work was to determine the nature and extent of the settlement during the successive periods at the site, and to ascertain the nature of remains in the Hathiwara mound which shows unmistakable indications of a quadrilateral fort with massive ramparts and corner towers.

During the last season, four trenches, SGL-1, SGL-2, SGL-3 and SGL-4 were laid out. While the first and the third trenches were laid respectively on the western and the northern margins of the Hathiwara, the second and the fourth were laid on the western and the southern fringes of the main mound. SGL-2, the only trench which provides a complete cultural index of the site, was subjected to further digging during this season.

The excavation, besides confirming the sequence already-known, brought to light much useful and fresh information relating to the early and late historical periods.

Remains of Period I were encountered in a restricted area (9 x 6 m.) of the trench labelled SGL-2. In this period were noticed structures of rammed earth, clay-bins and big jars (pl. XLVII A) for varied use. The principal pottery was bright to buff in colour and had fine slip. The shapes included dishes-on-stand, dishes, bowls, bowl-dishes, beakers, vases of medium to small-sizes, large storage jars, flat dishes with short sides and roughened bases, and hollow ring-stands. The pots were usually painted with geometric and naturalistic motifs, executed in black, brown and mauve-purple pigments. The geometric designs consisted of single or multiple bands, loops suspended from a band or enclosed between bands, triangles, filled in criss-cross or oblique or wavy lines, lenti-

culars, and swelling curves (moustache) usually ending in finger-like multiple prongs. There are a few naturalistic motifs represented by leaves and flowers. Besides, a number of vases were decorated with incised designs, viz., multiple wavy lines, deep horizontal lines intersected by single or multiple straight, oblique, wavy or zigzag lines, etc. Executed by a comb-like instrument, these decorative features were confined above the waist portions of the pots. The bulk of the pottery is analogous to the one recovered from tiara (*1954-55,* pp. 9-11, pls. X-XI). The mid-level of the period yielded a limited number of pottery betraying distinct similarity in look and hue to 'Cemetery H' pottery. The small- to medium-sized globular and ovoid vases with disc bases and painted motifs viz., the sweeping curves, butterfly or double-axe, thick bands around the neck (pl. XLVIII A and XLVIII B), from this period are comparable with the Kalibangan I ceramics.

Among the other finds mention may be made of two copper chisels of rectangular cross-section and slightly splayed edge, and also of a few agate inlays, heart-shaped bangles or ear-rings of red and azure-green faience.

Period II was marked by the arrival of an entirely new set of people who used the distinct Painted Grey Ware. Painted Grey Ware was found in the trenches (SGL-1 and SGL-2) right on the natural soil.

Period III was characterized by the N.B.P. Ware and other associated pottery. In SGL-2, it was found overlapping with the Painted Grey Ware.

Period IV was dominated by a mud rampart (pl. XLVII B), which was partially exposed in the cuttings of SGL-1 and SGL-3. The basal width of the rampart was 29 metres whereas its width at the top was much less. The top was flat and *kankary* yellow earth was spread over it.

Some time after the initial construction, the height of the rampart was further raised. There was a moat around the wall. The deposit against the wall yielded the Red Polished Ware, terracotta female figures belonging to the Gupta Age and a terracotta sealing bearing the legend *'Devadasa'* in the Gupta Brahmi of the fifth century A.D.

Period VII, pertaining to the medieval times, was represented by a thick but disturbed deposit yielding glazed ware sherds, associated red wares and other objects.

In Period VIII, a massive wall, provided with bastions, a small room, a closed drain were built in small *Nanakshabi* (local name for Lakhori) bricks. Other finds included a few potsherds, a jar and pieces of iron and wood.

RAJASTHAN

46. EXCAVATION AT BAGOR, DISTRICT BHILWARA.—The Department of Archaeology, University of Poona, and the Department of Archaeology and Museums, Government of Rajasthan, resumed (*1968-69,* pp. 26-28) excavation at the site. The work was directed by Dr. V. N. Misra, assisted by Dr. G. G. Mujumdar of the University of Poona, Shri C. G. Padval of the Deccan College Postgraduate and Research Institute, Pune, and Sarvashri Vijaya Kumar, S. L. Taneja and M. C. Mathur of the Department of Archaeology and Museums, Government of Rajasthan. The objectives of this year's excavation were two-fold: first, to expose completely the lower levels of the main cutting with a view to obtaining a comprehensive picture of the Late Stone Age Culture; and secondly, to determine the extent of the habitation.

In the main cutting, digging was resumed from 1.10 m. below datum, at which

point the work had been suspended last year. The total area available for digging was 132 sq. m. of which 116 sq. m. was covered by Trenches E, F and G.

This year's digging was done almost entirely in the Late Stone Age levels.

The total occupation deposit at the site was found to be 1.8 m. in depth, of which the levels between 1 and 1.4 m. below surface belonged to the Late Stone Age wherein the greatest concentration of microliths and animal bones was recorded. Nearly 1.5 lakh blades and microliths (discounting cores, flakes, etc.) were found in the main cutting alone. The industry is predominantly geometric, the main tool-types being obliquely-blunted blades, lunates, triangles, trapezes and points. Among triangles, the scalene variety is the main type, but isosceles ones were also known. Among trapezes, the type made on a narrow section of the blade, viz., the *petit tranchet* or transverse arrowhead, is very common. It may be recalled that the latter shape is uncommon in the Indian microlithic industry. On many microliths, retouch and use-marks were noticed.

Comminuted stray potsherds, 1-2 cm. in size, were available throughout from the occupation-deposit, but these are too few and tiny to be of any cultural significance. It is likely that these small bits might have reached the lower levels through infiltration in the sandy soil, as a result of the burrowing activity of animals. An exception was a hand-made small ovoid pot (pl. XLIX B) having two close-set holes on the neck on one side, found in Trench G, at a depth of 1.3 m. below surface. From its position it appears to be associated with a burial of Phase II, lying in the undug portion of the mound on the southern side of the trench.

Floor paved with schist slabs and gneiss and quartz pebbles occurred at successive levels. At 1.2 m. below the surface, almost the entire area in Trenches E, F and G, (132 sq. m.) was found to be covered with stones. Two circular arrangements of stones (pl. XLIX A) were also noticed at this level. One of these, located in Trenches F I-II and E I-II was 3.7 m. in diameter and had two openings, 1.9 and 1.4 m. wide respectively on the south-eastern and western sides. The enclosed area, but for the presence of a few bones was empty. The other, located in Trenches E I and G I, was 3 m. in diameter and had openings on the eastern, southern and north-western sides. Inside this circle were found a few isolated stones and fragmentary bones (pl. XLIX C). These circles probably represent outlines of huts or of wind-breakers. Below this level, structural activity in the north-western part of the trench became less. A semi-circular outline with a diameter of 4 m. was also noticed in Trench G III at 1.4 m. below surface. In Trenches G I. and E I., an area of 6 X 5 m. was found closely packed with stones which represented, perhaps, a flooring. At 1.5 m. below surface, no structural activity was noticed in the northern and central parts. In the southern part, however, a few stones were seen extending to the undug part of the mound.

On every floor, animal bones, mostly split and charred, were found in large quantities. At 1.2 m. level, two unusually massive bones, belonging to some large beasts, were found in Trenches in E II-15 and E III-3. In the lower levels, the frequency of bones, belonging to smaller animals including birds, was found to be comparatively greater. Associated with the bones were numerous hammerstones bearing tell-tale marks of use either in the manufacture of microliths or in breaking and splitting animal bones. Small, shallow querns and rubbing stones were also occasionally found on these floors. Besides, beads of agate and garnet (six examples) were also obtained from the various floor-levels.

Deep digging was also undertaken in Trenches E I and E IV to find out the stratigraphy of the site. Five broad layers were recognized, Layer 1,10 to 20 cm. in thick-

ness, was composed of white sand and yielded microliths and other materials of Phase III. Layer 2, 55 cm. to 1 m. in thickness, was composed of dark-brown earth and yielded structural evidence as well as microliths. Layer 3, 55 to 60 cm. in thickness, consisted of light-brown sand, and yielded microliths and animal bones, but was devoid of structural activity, except in the upper part. Layer 4, 40 to 90 cm. in thickness, and yellowish in colour, was devoid of archaeological remains. Layer 5 was markedly different from the overlying layers and was made up of white, highly micaceous sand, rich in concretions. This layer was found to be dipping from north to south in keeping with the present slope of the mound. It was exposed to a depth of 3.5 m. from the surface. Below this depth, digging was not possible because of the sandy character of the soil.

The deposition of light brown or yellowish sand over the *kankar-rich,* micaceous sand, of layer 5, marked a new phase of wind activity at the site, and continued throughout its period of occupation. The yellowish sand of layer 4 becomes progressively darker upwards partly to the presence of humus and partly to habitational activity.

With a view to finding out the extent of habitation, four trenches, labelled H, I, J and K, each measuring 3 X 2 m., were laid on the peripheral slopes of the mound (respectively 15 m. on the southern, 27 m. on the western, 16 m. on the northern and 24 m. on the eastern side of the main cutting). While Trenches H and I did not yield any significant structural evidence, Trenches J and K showed several successive stone-paved floors. It appears, therefore, that the location of Trenches H and I was marginal to the main settlement which might have covered an area of approximately 80 X 80 m.

Five C-14 dates are now available for this site: three for the Late Stone Age levels and two for the chalcolithic. These dates show a range of 4400 B.C. to 2100 B.C. for the latter.

Exploration in the neighbourhood of Bagor resulted in the location of other Late Stone Age settlements along the banks of the Kothari at (i) Baghdana on the north-western edge of the village of Bagor, (ii) Bhanvlas, about 1.5 km. east of Bagor and (iii) Mankyas, about 3 km. south-east of Maharsati.

TAMIL NADU

47. EXPLORATION AT VASAVASAMUDRAM, DISTRICT CHINGLEPUT.—Following the discovery, through ploughing, of a few conical jars, resembling those found earlier at Arikamedu, the Department of Archaeology of the Government of Tamil Nadu had a magnetometric survey of the site undertaken through the agencv of Dr. Hesse. The survey, which was conducted only in a restricted area, however, did not reveal any buried structures.

48. EXCAVATION AT KANCHIPURAM, DISTRICT CHINGLEPUT.—The Department of Ancient Historv and Archaeology, University of Madras, took up excavation at the site. Two localities, both in the heart of the ancient city, were selected for this year's work, one near the Kamakshi Amman temple and the other in the premises of Jnanaprakasa-swamikal Mutt near the Ekambaresvarar temple. Four trenches were laid out, one (KCM-1) in the former locality and three (KCM-2, KCM-2A and KCM-3) in the premises of the latter. The average depth of the occupation-strata in both these areas was about 6 m.

The excavation yielded archaeological material belonging to three cultural periods covering the pre-Pallava, Pallava, Chola and Vijayanagar periods.

Period IA *(circa* third to first centuries B.C.) was represented by a fine Black-and-red Ware with some of the sherds bearing painted designs mostly in lattice-patterns.

Period IB *(circa* first century B.C. to fourth century A.D.) was marked by the use of the Rouletted, thick Black-and-red, fine black and grey wares of megalithic affiliation, beads of semi-precious stones, iron objects and terracotta objects. One of the grey ware fragments was found to bear five Brahmi letters *(pu ta la ti sa)* of the first-second centuries A.D. These may represent the name of a Buddhist monk Putalatisa. A few baked-brick structures, possibly forming part of a Buddhist shrine were also found in the deposits belonging to this sub-period.

Period II *(circa* fourth to ninth centuries A.D.) was distinguished by the occurrence of amphorae jars (local imitations), fine bright-red and orange-slipped wares (some of them painted in black) and glass and stone objects, etc. Among the structural remains of the Period may be mentioned a small circular structure, perhaps serving as the basement of a votive *stupa.*

Period III *(circa* ninth to sixteenth centuries A.D.) was represented by the use of (i) polished red wares with incised and impressed designs on the rim and neck portions, (ii) dull, coarse red ware (both slipped and unslipped varieties) and (iii) a few sherds of the Chinese Celadon Ware.

The archaeological evidence, so far obtained, seems to confirm the antiquity of Kanchipuram, as also its association with Buddhism in the early centuries of the Christian era.

49. EXPLORATION IN DISTRICT DHARMAPURI.—Shri K. Chandrasekhara Menon of the Southern Circle of the Survey located megalithic burials with stone-circles and cairn-packing at Balanapalli, Enusonai, Melumalai, Sulagiri and Ullati.

One of the burials at Enusonai had dressed slabs as circle stones.

In the Taluk Dharmapuri itself he found: (i) megalithic burials at Adagappadi, Arakkasanahalli, Balajangamanahalli, Gollahalli, Hogainakal, Kallappambadi, Karagur, Kumbalappadi, Laligam, Marandahalli, Nayakanahalli, Nekkundi, Nettadahalli, Penna-garam, Perumbalai and Thoppurganigarahalli; (ii) a megalithic habitation-site at Nayak-kanahalli; (iii) an early medieval habitation-site at Adamankottai and Marandahalli; (iv) a Late Stone Age site, yielding points, blades, burins, crescents and scrapers at Alagappadi, Balajangamanahalli, Laligam; and (iv) a Tamil inscription, probably of the fourteenth century A.D. at Marandahalli. In Taluk Harur, he found similar megalithic burials at Kiraippatti, Polayampalle and Verappatti.

UTTAR PRADESH

50. EXPLORATION IN DISTRICTS ALLAHABAD, BANDA, MIRZAPUR AND PRATAPGARH.—In continuation of the work of the previous year (*1968-69,* p. 33), Prof. G. R. Sharma, assisted by Sarvashri D. Mandal, B. B. Misra, V. D. Misra and R. S. Rana and Dr. R. K. Verma, conducted exploration in the Belan Valley and the adjoining regions of the Vindhyas and brought to light: (i) fifteen factory sites of the Early Stone Age; (ii) twenty of the Middle Stone Age; (iii) two of the Upper Palaeolithic yielding the blade industry; and (iv) several sites of the Late Stone Age, yielding blades and micro-

liths. Besides, quite a large number of neolithic sites, painted rock-shelters and megalithic tombs were also located in this area.

In the sections on the Belan and its tributaries, Early Stone Age tools were obtained from the boulder-conglomerate (Cemented Gravel-I), Middle Stone Age tools from the Cemented Gravel-II and the overlying silt deposit, Upper Palaeolithic tools from the semi-consolidated Cemented Gravel-III and the underlying clay deposit and Late Stone Age tools from the uppermost layers overlying the Cemented Gravel-III.

All the factory sites of the Early Stone Age were found on the northern fringes of the Kaimur range within an area of 24 km. from Chatarpalia in District Allahabad on the west to Chandgarh in District Mirzapur in the east. In their location, they share certain common features, viz., the projection of a hill with a gentle slope merging into the plain. The projected portion of the hill was seen resting on shale-formation which is fast weathering at a number of places. Quartzite, available in the form of erratic boulders, was used as the raw material. The tool assemblage consisted of big cores, flakes, hand-axes, cleavers and scrapers; pebble tools, however, were rare. The cores and tools in different stages of manufacture did not show any evidence of rolling. The location of the factory-sites was as follows: (i) on Chandotri hillock at Chatarpalia; (ii) on the Kabra Pahar at Khanuhakhan and Machharihawa, and on the Ramgarh hillock at Atreji, Belarahi, Kodawari, Karaundahia, Itaha, Mahua-Kachchha, Nagini-ki-Pahari, Orawa, Paniha and Ramgarhwa, all in District Allahabad, and on the Drammondganj at Chandgarh and Murali-Mahugarh in District Mirzapur.

Of the twenty factory-sites of the Middle Stone Age located this year, fifteen were situated in close proximity to those of the Early Stone Age mentioned above, but at a lower level, near the base of the projecting hillocks. The remaining five sites were located: (i) on the Batuskar hillock at Bataskuwar; (ii) on the Chandawa-ki-pahari at Murawa; (iii) on the Ramgarh hillock at Murali, all in District Allahabad; and (iv) on the Marawa-ki-pahari at Marawa; and (v) on the Khuntabir plateau at Khuntabir in District Mirzapur. Besides, tools of the Middle Stone Age were also collected from the river-beds of the Belan and the Seoti and their tributary nullahs, Bagaha in District Allahabad and Chitaha, Galara, Maheshpur, Neogawa and Takwa in District Mirzapur. The sites were littered with tools showing different stages of manufacture. The cores, flakes and tools, were found in fresh condition without any perceptible rolling. The finished tools consisted mainly of scrapers, points, blades and burins. Save in a few cases, the tools were found to be exclusively made on quartzite. It may be mentioned that quartzite employed by the people of the Early Stone Age was of a comparatively crude and inferior quality susceptible to easy weathering while that used by the people of the Middle Stone Age was both stronger and finer, its colour varying from blackish-brown to greenish. Chert was present in very small percentage.

The two factory-sites yielding tools of the Upper Palaeolithic period were located, below the hill, at Morawa and Orawa. The tools were made mainly from cherty material and comprised long blades having considerable width/Such tools were also collected from Daria, Itaha, Lakhapur, Mahuakachchha, Orawa, Pahiha and Ramgarhwa in District Allahabad and Galare on the Seoti Garabara Raja, Khuntabir and Marawa in District Mirzapur.

At Khuntabir and Morawa, Late Stone Age tools were found over a considerable area. While from the latter site only the non-geometric microliths, fashioned on flinty chert, were obtained, the former site yielded geometric microliths. Besides, such tools were also obtained from Bichchia, Bhikhampur, Kurha and Mahrudih on the Allahabad-

Unnao road, Baha-ka-nala near Gajadhapur, Tonkwa on the Adwa, Bagaha on the Seoti, Baraunaha, Chundarighat, Garha and Majhigawan on the Tundiari, Kheuli and Panchoha, all in District Allahabad.

The site at Bichchia and Kurha are situated on the old formations, now known as *hangar,* and show 8 to 10 m. high sections above the modern flood-plain of the Ganga. These sections constituted the ancient bank of the river which, later on, receded further south forming an 8 km. wide *khadar* or *hachchar.* The stratification of the sections from top downwards is as follows: sandy (0.3 to 1.2 m. in depth), yellowish clay mixed with small *kankar* and containing plenty of shell; blackish clay full of small nodules. The sandy layer, which caps the old formation, perhaps marks the end of an epoch in the life of the Ganga,. and seems to have been deposited by the river when its flood-plain was higher than the section now available. Fossil-fauna of Early to Middle Pleistocene had been recovered earlier from this deposit during the construction of the Curzon Bridge at Phaphamau on the river Ganga.

Throughout this deposit and also in part of the underlying yellowish clay, cores, waste flakes and finished tools were found in a wide area from 15 to 29 km. from Allahabad on the Allahabad-Unnao road. The tools do not show any evidence of rolling, though some of them are patinated. A statistical analysis of the assemblage from the site at Kurha shows that the cores, waste flakes and finished tools constitute 3.8, 8.5 and 15.7 per cent respectively of the total collection. The material employed was chert, chalcedony, quartz and agate. Blunted-back blades, scrapers, parallel-sided blades, points and lunates were the common tool-types. Of these, blunted-back blades constitute the majority. On the basis of typology, the tools represent the earliest stage of the microlithic industry, comparable to the tools of the earliest levels of the open-air settlement at Lekhahia in District Mirzapur.

The site of Bhikhampur is situated on the eastern end of the meander of the Ganga, 28 km. from Allahabad. Cores, waste flakes and finished tools were collected from an area measuring 2 x 2 km. The material employed was chert, chalcedony, agate and crystal. Of these, the larger percentage was of the waste flakes. It is significant to note that among the finished tools, only two types, viz., the scraper and the point, were available. The site of Mohrudih yielded arrow-heads as well.

On the basis of the nature of the settlement and the transportation of the core-nodules from hills, 40 km. away, it is reasonable to infer that these habitation-sites represented temporary camps in the newly-reclaimed area, which, on account of its sandy character, could have produced the scrub necessary to support small game.

The exploration also brought to light a number of rock-shelters, both painted and unpainted, within a range of 24 km. to the south-west, south and south-east of Koraon in Meja Sub-Division of District Allahabad. Of these, the more noteworthy were located at Chandatari, Chandawa, Daria, Kosakangarha and Lakhahar. The rock-shelters at Chandatari and Kosakangarha also yielded microliths. The painted designs consist of dancing scenes, animals like deer, stag, tiger, boar, nilgai, elephants and horses and various symbols. The paintings were mostly found to be executed in red-ochre, and occasionally in white. At Daria, different layers of paintings were noticed, superimposed one upon the other indicating different periods of occupation. Neolithic-celts, made of basalt, were recovered from Chorabana and Chaukatha-Gaura (northern Meja), Jamua on the Lapari and the Taradaha on the Belan. Shri Jai Narain Pandey, a Research Scholar of the Department, found similar celts and pounders from Pahara near Bharatkup Railway Station in Banda district.

In the valley of the Belan and the adjoining regions of the Vindhyas, quite a large number of megalithic sites were located, the more noteworthy being Khanuhakhau, Lakhapur and Murawa, in the Tundiari Valley, District Allahabad, and Garbata-Raja, Khuntabir, Mahespur and Murawa, and Nowgawan, District Mirzapur. On most of the sites, cairn-circles constituted the dominant type, though other forms of burials like cists and cists within cairns are also met with. On the basis of surface indications, these monuments can be divided into two groups: (i) those of Khuntabir and Nowgawan resembling the cairn-circles of Kakoria, on the Chandraprabha in District Varanasi; and (ii) the remaining groups showing affinities with those of Kotia-group. Among the other objects found from the sites, mention may be made of Kotia type of pottery from the latter group and a few pieces of crested-ridge flakes from the former.

Settlements of the Kushan period were located at Bankey Lal-ji-ka-Pura, Mara-khamai, and Mauima in Soraon Sub-division of District Allahabad.

Shri Devi Prasad Misra, of the same Department, explored the ancient site at Diha, 48 km. north-west of Allahabad, in Kunda Sub-division of District Pratapgarh and found sherds of the N.B.P., black-slipped, grey and red wares. Besides, a few pieces of quartz and banded agate were also collected, which may have been used as raw material for the beads.

.51. EXCAVATION AT LAL QILA, DISTRICT BULANDSHAHR.—In continuation of the previous year's work (*1968-69,* pp. 35-36), the Department of History, Aligarh Muslim University, resumed the excavation at the site. The work, as in the previous season, was directed by Shri R. C. Gaur, under the supervision of Prof. S. Nurul Hasan. The objectives of the present year's work was to determine the extent and pattern of habitation. It may be recalled that last year's operation, though limited in scope, had already provided sufficient evidence to indicate that Lal Qila was a habitation site of the people using the Ochre Colour Ware. The present season's excavation, covering an area of 632 sq. m. has confirmed the earlier hypothesis. Definite evidence of habitation and associated objects were brought to light for the first time.

The excavation revealed that the average thickness of the occupation-deposit was about 1 m. representing three distinct layers. Of these, layer 2 proved to be very rich in finds. To this level belonged a fairly extensive clay-plastered floor, reinforced with horizontally-laid potsherds rammed in earth and containing a series of post-holes. Adjacent to this floor and under a mud-brick debris were found a few regularly-laid sun-dried bricks showing mud mortar and, in the west, a platform-like structure made of rammed earth. The precise nature of the structure and the size of the bricks still remain to be determined. A few baked bricks were also noticed here and there, and a wedge-shaped brick as well (length: 29.5 cm; width, on one side, 21 cm. and on the other, 17 cm.; thickness: 7.5 cm.). No complete brick, however, was found. About 47 m. from the above-mentioned floor, was found a roughly circular pit about 4 m. in depth and 7.7 m. in diameter. Although unlined, the possibility of its being a well cannot be ruled out. Of particular significance was the discovery of copper objects in association with the Ochre Colour Ware. This stratigraphic association was reinforced by the discovery of a Copper Hoard from Kiratapur, about 3 km. from Lal Qila, containing an anthropomorphic figure, two copper celts, one of which had a five-pointed star incised on it and copper bangles.

Thermoluminiscence dating of a few potsherds of the Ochre Colour Ware from the

site, conducted by the Archaeological Research Laboratory at Oxford, indicate a mean date of 1880 B.C.

Besides other finds, animal bones were found in large numbers. The cut-marks, present on many of them, suggest that meat was the staple diet. Evidence of some grains (cereal), suggesting agriculture as a subsidiary occupation, was also available.

The entire pottery obtained from the excavation varied in shade from ochrous to brownish and occasionally showed unoxidized grey core. Made on wheel, the ware had a sturdy fabric and was treated generally with a red slip which, in most cases, seems to have flaked off, exposing the ochrous core. Some of this ware showed black painted designs or incised and applique decorations as also graffiti marks. It is significant to note that none of the sherds showed any rolled edges. The fields of decoration were the rim, neck and shoulder portions of the vases; in a few cases, however, the painted designs extend to the lower part of the vases as well. Among painted designs, the representation of an elongated, humped bull, having prominent crescentic horns flanked by a leafy motif, deserve special attention. Other designs included thick bands, sometime enclosed by wavy lines, slanting parallel lines, verticals emanating from horizontal bands, loops, hatched triangles between two horizontal lines, squares with diagonals, circles, semicircles and grid, crescentic combs, lily (?) floral, etc. The incised designs included oblique strokes, thumb-nail impressions, grids of verticals and horizontals, etc. The oblique strokes were occasionally executed over an applied band at the maximum girth of the pot. As regards graffiti, nearly ten marks were recognized of which the ladder, the cross and the trident seem to be the basic ones.

Among shapes, the commonest was a vase with an out-turned rim, occasionally horizontally splayed, and having a globular body. A few examples also had a strap handle on the shoulder. Other shapes included jars with collared rim, knobbed lids, basins and bowls. The latter were available in different sizes and had vertical or incurved sides. One of the bowls also showed traces of separate legs, attached to its base. A few of the basins had strap (loop) handles on the inner base, one of the handles being decorated by a rope pattern. Fragments of the different parts of the dish-on-stand indicate that the type was known at Lai Qila.

The other finds from the excavation included: (i) five objects of copper, including a fragmentary celt (pl. LA), a pendant, fragmentary arrow-head, beads, etc.; (ii) two terracotta human figurines; (iii) sixteen terracotta bangles; (iv) seventeen terracotta marbles, both plain and incised; (v) fifteen terracotta and two stone beads (pl. LI B); (vi) ten terracotta toy-wheels; (vii) five terracotta discs or hopscotches; (viii) eleven stone rubbers; (ix) two small shallow querns; (x) twelve bone implements including arrowheads, points, etc. (pl. LIIA); (xi) a small piece of net-sinker; (xii) skin rubber and (xiii) four miscellaneous terracotta objects (pl. LB).

Out of the two hand-modelled female human figurines (pl. LI A) one is in a good state of preservation and deserves special attention. It has a narrow receding forehead, elongated neck, bulging eyes, punched parrot-beaked nose, depressed cheeks, broad jaw with protruding lips, divided by a horizontal slit chin and prominent breasts. The shoulders are perforated, obviously for attaching arms. The terracotta bangles were of different shapes and sizes, showing triangular, square or plano-convex sections. Most of the terracotta balls (marbles) were plain. One of them, however, showed sixteen parallel incised strokes and pin-holes in different linear patterns. Of the ten terracotta wheels, seven were broken, one was made out of a potsherd and two were decorated with pin-hole design (pl. LII B). The terracotta beads were mostly biconical in shape. One of these

showed incised horizontal strokes within two parallel lines in the central part of the body while another had a seven-pointed star on one side and six-pointed on the other. Besides, there were three terracotta objects of indeterminate shape, one of these looking like an anthropomorphic figure with tapering legs. Among the remaining terracotta objects, two appear to be gamesmen.

52. EXPLORATION IN DISTRICT DEHRA DUN.—With a view of extending the work carried out in the Beas region of Himachal Pradesh, Dr. R. V. Joshi, of the Prehistory Branch of the Survey, examined the high level terraces around Kalsi and Mussoorie as a part of the project for the study of Stone Age cultures and glacial morphology of the sub-Himalayan region. A few unifacial pebble-choppers were found at Kalsi but there was no trace of the handaxe industry.

53. EXPLORATION IN DISTRICT ETAWAH.—Under the auspices of the Department of Ancient Indian History, Culture and Archaeology of the Jiwaji University of Gwalior, Dr. K. P. Nautiyal, Director, Scindia Museum, Gwalior, assisted by Sarvashri S. K. Gupta, D. D. Rajput, R. P. Chaudhary and S. K. Srivastava, explored the following sites.

At Etawah fort, which is built on an ancient mound, were found sherds of the N.B.P. Ware, terracotta animal figurines and medieval pottery.

At Asai and Kheda Jaychand were found remains of medieval structures and terracotta animal figurines.

At Chakannagar Kheda (Chakranagara of the *Mahabharata),* situated on the right bank of the Yamuna, sherds of the Painted Grey and N.B.P. Wares as well as terracotta figurines of the early Christian era were found.

Shri L. M. Wahal of the Northern Circle of the Survey reported the find of a Copper Hoard at village Saifai Lichchwai, comprising hooked sword, anthropomorphic figures, celts, bangles, bar celts and harpoons. The Hoard, which came to light as a result of ploughing in the field, however, could not be recovered in full (save for an anthropomorphic figure and a sword with hooked handle).

Shri Wahal thereafter undertook an exploratory excavation at the find-spot of the Hoard and obtained a sword typically representative of the Hoard in stratigraphic association with the so-called Ochre Colour Ware. Subsequent examination by Sarvashri B. B. Lai and B. K. Thapar revealed that the strata yielding the Ware is over 1 m. in depth.

54. EXCAVATION AT AYODHYA, DISTRICT FAIZABAD.—The Department of Ancient Indian History, Culture and Archaeology, Banaras Hindu University, under Professor A. K. Narain, assisted by Shri T. N. Roy and Dr. Purushottam Singh, conducted an excavation at Ayodhya. The ancient site is quite extensive in area. The northern portion of the site, overlooking the Sarayu, presents an impressive section showing the depth of the occupation-strata.

The main objective of this season's work was to ascertain the cultural sequence at the site. To realize this aim, three small cuttings were made, one near the Jain Ghat, the second on the Lakshman Tekri and the third on the Nal Tila.

In the first two cuttings, called Ayodhya-1 and Ayodhya-2, the excavation revealed a sequence of three cultural periods, of which the earlier two were continuous, while the last one followed after a desertion of the site. In Ayodhya-3, which was at a comparatively lower level than the remaining two cuttings, the deposits of only the earliest

cultural period were encountered. It was marked by the presence of the N.B.P., coarse grey and the associated red wares. Amongst other finds of the period, mention may be made of terracotta discs, balls and wheels, bone points and beads of copper, crystal, glass and terracotta. In the upper levels of this deposit, six terracotta human figurines and several animal figurines, grey in colour and two Ayodhya coins were found. Some iron objects were also recovered.

In addition to the above work, the Kuber-Tila, identified by Cunningham as the site containing the relics of the Buddha, was also explored. A massive brick (size: 39 X 23 X 6 cms.) structure, having several phases of construction, was exposed.

55. EXCAVATION AT BHITARI, DISTRICT GHAZIPUR.—The Department of Ancient Indian History, Culture and Archaeology of the Banaras Hindu University, under the direction of Dr. K. K. Sinha, resumed (*1968-69,* pp. 38-39) work at the site. During this field season, the work was confined to the area near Skandagupta's pillar.

It may be recalled that in the course of last year's excavation in this area, remains of a plinth, belonging to a massive structure, were uncovered. It was also surmised that these remains perhaps formed a part of the temple that once stood adjoining the inscribed pillar of Skandagupta.

Attempts made this year to recover the complete outline of the plinth were met with partial success. While the western face was found to be completely missing, the northern seems to have suffered considerable damage due to persistent brick-robbing. Nevertheless, other indications on the site helped to determine the plan of the plinth. Originally, the temple was a square with each side measuring 16.38 m. A later extension was made towards the east and it now measures 23.90 m. X 16.38 m. The stone-paved floor, partly exposed last year, and believed to be a circumambulatory passage was found to occupy a far more extensive area than that of the plinth which was built over it. Further work is needed to determine the limits of the floor as also its specific use. Last year, walls belonging to a period earlier than both the stone-floor and the plinth above, were exposed in a limited area. Although no datable finds were brought to light last year, it was surmised that these earlier remains could have belonged to the pre-Gupta period, as testified by an inscribed brick *in situ,* with the legend *Srikumaragupta.* What is equally significant in this context is the find of several fragments of moulded bricks and terracotta panels in association with the earlier structures. It is reasonable to conclude that, in the area around Skandagupta's pillar, the building activity began only in the Gupta period.

An interesting sidelight of the discovery in this area was that in the earlier structures all embellishments were in terracotta, while in the latter was seen large-scale use of stone mainly for decorative architectural members.

56. EXPLORATION IN DISTRICT KANPUR.—In continuation of the previous year's work, Shri L. M. Wahal of the Northern Circle of the Survey discovered N.B.P., black-sliped and medieval wares at Kurain. He also noticed Brahmanical sculptures of the medieval period at Bithoor, Kalyanpur and Kurain and Gupta sculptures at Nemania Khera.

57. EXPLORATION IN DISTRICT LUCKNOW.—In continuation of the earlier exploration, Dr. S. B. Singh of the Northern Circle of the Survey discovered a large number of

medieval sites with sculptures and glazed pottery, and a few early historical sites yielding the N.B.P. and later wares.

The sites of the latter category were located at Aurangabad, Barailia, Jindaur, Kharahwan and Sarai Sheikh; from Barailia, N.B.P. Ware was also found.

The sites of the former category were found at Arti, Aurangabad, Auranwan, Baheri, Bhadsarai, Bhatgaon, Bijnor, Chhaoni, Chaugwan, Deori, Dhobaila, Dilwansi, Fatehpur, Gadha, Garobhit, Khurram Nagar, Khusalpur, Kumhrawan, Laulai, Mahona, Mati, Majhgwan, Malihabad, Maura Khera, Nalikot, Natkur, Parwar-Pachhim, Parwar-Purab. Piparsand, Raipur, Saifalpur, Sardarnagar and Taraona.

Besides, medieval pottery from Amaniganj, Aramba, Mati, Majhgwan and Misripur, images of Vishnu; a *Varaha* figure from Amaniganj and Dilwansi were discovered.

58. EXPLORATION IN DISTRICT MAINPURI.—Shri L. M. Wahal, of the Northern Circle of the Survey, discovered Vishnu and Surya images in village Kakan.

59. EXCAVATION AT SONKH, DISTRICT MATHURA.—In continuation of the previous year's work (*1968-69,* p. 40). the German team of the Berlin Museum of Indian Art resumed excavation at Sonkh. The work, as in the former seasons, was directed by Prof. Dr. H. Haertel. The team consisted of two excavation architects, three technicians and two students of Indian archaeology and art of the Berlin University. The objectives of this season's work were, (a) to continue horizontal digging in the previous year's area and (b) to investigate the extent of the late Kushan settlement, partly exposed towards the end of the last year's excavation. Level 15 and the latest occupation phase of level 16 was found to belong to the Gupta period. The remains consisted of poorly-built structures of re-used Kushan bricks. Within these levels were found several jars and bowls of a typical brown-red ware, painted with black parallel lines, a recurrent type being the double-rimmed iar as also pieces of moulded pottery (pl. LIV B). Among datable finds, mention may be made of: (i) an unburnt clay seal, bearing an inscription in Gupta characters; (ii) a fragment of a terracotta relief, depicting a ferocious looking *makara.* presumably from a Ganga-composition; and (iii) a small Gupta Vishnu image of Karauli sandstone.

From the earliest phase of level 16. remains of seven houses could be excavated. These houses seem to have been built around an open area (notablv on the west, south and north). The finds obtained from these houses comprised potterv, terracottas and stone plaques of Durga Mahishasuramardini. Skanda, Vishnu (pl. LIII A) and matrikas (pl. LIII B), showing typical Kushan features. The most important among these was a bronze image of a male deity accompanied by a lion-headed *Matrika* with a child in her left arm (pl. LIV A). From the same level, was found a small jar containing one hundred and twenty copper coins. While two of these belong to Huvishka, the remaining are either of Vasudeva I or of Kanishka III.

Towards the close of the season's work, a structure of unusual plan was brought to light. Situated to the east of the open area enclosed by the seven houses, it may have been the main hub of the settlement. Preliminary investigations revealed that, during its life-time, the structure was re-built on more than two occasions. One of the walls was apsidal on plan and as such may point to the non-secular nature of the structure. A complete outline plan of the structure as also its various phases still remain to be recovered.

Along the northern fringe of the area, levels 17,18 and 19 belonging to the Kushan period were partly exposed.

60. EXPLORATION IN DISTRICT MEERUT.—Continuing his work in the District (*1968-69,* p. 40), Shri R. P. Sharma of the North-western Circle of the Survey discovered a Painted Grey Ware site at Dabathua, and early historical sites at Daurala, Mataur and Ulaghpur.

61. EXCAVATION AT KASERI, DISTRICT MEERUT.—Dr. Romila Thapar of the History Department of the University of Delhi, and Shri K. N. Dikshit of the National Museum, New Delhi, jointly conducted excavation at Kaseri, situated about 2 km. north of Mohan Nagar, on the right bank of the river Hindon. The objectives of the work were two fold : (a) to determine the nature of the earliest habitation at the site; and (b) to establish the relationship with the later cultures of the region lying between the Yamuna and the Hindon.

Three trenches, each measuring 10 X 5 m., were laid out across the mound along the east-west axis (one each on the top and the peripheral slopes on the west and the east). The excavation revealed an approximately 3.5 m. thick occupation-strata represented by six cultural Periods, ranging in date from *circa* first half of the second millennium B.C. to the early medieval period.

Period I was characterized by a few potsherds of the Ochre Colour Ware, showing affinities with the similar Ware reported from other sites in the upper Ganga-Yamuna *doab.*

Period II witnessed the arrival of an entirely new set of people who used the characteristic Painted Grey Ware and its associated ceramics like the black-and-red, black-slipped and plain red wares. Of the structural remains of the Period, mention may be made of an oval-shaped hearth. Besides, terracotta beads and balls were also found from the deposits of this Period. The finds indicated that the site was occupied sometime towards the later phase of the Painted Grey Ware.

Period III was marked by the presence of plain grey ware of thicker fabric and its associated miscellany of finds. No sherd of the N.B.P. Ware, however, was found.

Period IV was characterized by the predominance of red wares, assignable to the early centuries of the Christian era. A few baked bricks with finger-marks were also found in the strata belonging to the Period. No complete or part structure, however, was encountered.

Period V represented the Gupta and the post-Gupta times. A significant find of this Period was a terracotta female figurine, perhaps Lakshmi, belonging to the Gupta period. The pottery of the post-Gupta period was plain red, sometimes with red slip.

Period VI, the last occupational period at the site, was characterized by the use of a red ware showing such shapes as knife-edged bowls, globular jars, carinated cooking-pots, vases, etc. The pre-Mughal glazed ware was also in use.

62. EXCAVATION AT SARAI NAHAR RAI, DISTRICT PRATAPGARH.—The Department of Archaeology, Government of Uttar Pradesh, with technical assistance from the Archaeo logical and Anthropological Surveys of India, undertook excavation at the site.

During the course of the excavation, an extended burial (pl. LV A), laid supine in west-east direction, with the head towards the west, was exposed. Associated with the burial were two fragmentary cores, two lumps of burnt clay and charred animal bones.

Surface indications of eight such burials were also noticed. It may be recalled that earlier explorations at the site (*1968-69,* p. 33) had revealed the occurrence of Late Stone Age tools like blades, triangles, lunates, points, scrapers, arrow-heads, etc. (pls. LV B, LV C and LV D).

63. EXPLORATION IN DISTRICT SAHARANPUR.—Shri Shankar Nath, of the North western Circle of the Survey, continued (*1968-69,* p. 41) the exploration in Tahsil Saharanpur and discovered a Sunga-Kushan site at Suneheti Mustahkam. He also re-examined the ancient site at Anwarpur Baraoli, explored earlier by the students of the School of Archaeology (*1964-65,* p. 79) and discovered Ochre Colour pottery, which the earlier explorers had not noticed.

64. EXPLORATION IN DISTRICT SITAPUR.—Shri L. M. Wahal of the Northern Circle of the Survey located a large mound at Nimsur on the bank of the river Gomati and obtained Ochre Colour, the N.B.P., black-slipped and Muslim glazed wares.

65. EXCAVATION AT MANWAN, DISTRICT SITAPUR.—In continuation of the previous work (*1968-69,* p. 39), the Department of Archaeology, Government of Uttar Pradesh, resumed excavation at the site. The excavation revealed an 8 m.-thick strata, extending in date from *circa* 500 B.C. to the medieval times.

At the lowest level was exposed a brick-lined well which continued to be used in the three succeeding phases. Besides, two brick (size: 40 X 25 X 6 cm.) structures were also found. The associated pottery was the N.B.P. Ware.

The succeeding cultural phase represented the Sunga and Kushan periods. The finds obtained from the corresponding levels included: typical pottery, viz., sprinklers, ink-pot type lids, etc., terracotta human-figurines and terracotta sealings, bearing legends in Brahmi characters.

From the levels ascribable to the Gupta period were found terracotta figurines, both human and animal, and a toy-cart with human face.

The site seems to have been re-occupied during the early medieval times, as evidenced by the find of (i) a red sandstone sculpture of Mahishasuramardini, (ii) pear-shaped terracotta beads, (iii) shell and glass bangles, (iv) copper and iron implements, and (v) typical Muslim pottery.

II. EPIGRAPHY

SANSKRITIC AND DRAVIDIC INSCRIPTIONS[1]

ANDHRA PRADESH

1. INSCRIPTION, INDUKURUPALLE, DISTRICT CUDDAPAH.—This hero-stone inscription (pl. LVI), in Telugu language and characters of about the tenth century A.D., belongs to the reign of Ramamaharaju and records the death of a hero after rescuing cattle.

2. INSCRIPTION, PALAKOLLU, DISTRICT WEST GODAVARI.—This inscription, in Telugu, on a pillar lying in the Kshiraramesvara temple, dated in the twenty-third regnal year (A.D. 1034-35) of Rajendrachola I, records the grant of ten *puttis* of land, made tax-free, measured by *chenumgondakola* by a body called Setti-120 to the temple in lieu of gold received from the treasury of the god Umasahitar Rajendrachoda-vidamgar in Palukolanu situated in Pavunavaramu to provide for lamps in the same temple.

3. PILLAR INSCRIPTIONS, VALLURU, DISTRICT WEST GODAVARI.—Four Telugu inscriptions on four stray pillars, lying in the Pushpesvarasvami temple in the village, record the gift of the respective pillars on which they are engraved. The first, dated Saka 1201 (A.D. 1279), records the setting up of the pillar in the *dipa-mandapa* of the Kusumesvarasvami temple in Valluru. The second, also dated Saka 1201 (A.D. 1279), records the installation of that pillar in the central bay (*madhyaramga*) in the *asthana-mandapa* of the same temple. The third, dated Saka 1211 (A.D. 1289) and belonging to the reign of the Kona chief Ganapatideva-maharaja, records the setting up of the pillar called *akhanda-vartti-dipa-stambha* in the *divyavimana-mandapa* of the same temple. The fourth, in characters of about the thirteenth century, records the setting up of that pillar called *nila-mani-stambha* in the *nrityakuta* in the *nivasabhavana-mandapa* of the same temple.

GUJARAT

4. INSCRIPTIONS, BET DWARKA, .DISTRICT JAMNAGAR.—Three hero-stone inscriptions, all of them dated Vikrama 1859 (A.D. 1802) and written in the local dialect, refer to an encounter of some persons with the English at the island named Bet Samkhoddhara.

5. TEMPLE INSCRIPTIONS, DWARKA, DISTRICT JAMNAGAR.—About twenty inscriptions, in the local dialect and in Nagari characters of about the sixteenth century, are the records of the pilgrims who visited the temple.

6. INSCRIPTION, PRABHAS PATAN, DISTRICT JUNAGADH.—This fragmentary inscription, engraved on the pedestal of an image fixed in the western wall of the Gauri-Kunda,

[1] Information from: 11, the Director of Archaeology, Gujarat State; 18, 19, Shri V. S. Wakankar, Ujjain; 21-24, 26-30, the Director of Archives and Archaeology, Maharashtra State; 34, the Director, Kannada Research Institute, Dharwar and the rest from the Chief Epigraphist of the Survey.

is in Nagari characters of about the thirteenth century and in Sanskrit language. It records the renovation of two shrines of the goddess (Devi) along with the Pushkara *tirtha,* where Brahma is stated to have offered worship, by *Maham* Jayata, son of *Sadhu* Somasiha. It mentions *Ganda Sri Para* Brihaspati and his wife Umadevi who is stated to be the daughter of *Ganda Sri Para* Virabhadra (cf. *Inscriptions of Kathiawad,* No. 19, where it is wrongly stated that the inscription mentions Brahma's temple at Pushkara).

7. JAINA INSCRIPTION, STATE MUSEUM, PRABHAS PATAN, DISTRICT JUNAGADH.—This inscription, in Sanskrit language and Nagari characters of about the seventeenth century, records some renovation at Devapattana by certain individuals and refers to the Jaina pontiff Jinadatta Suri as the worshipper of sixty-four *yoginis* and fifty-two *Kshetrapalas.*

8. IMAGE INSCRIPTION, STATE MUSEUM, PRABHAS PATAN, DISTRICT JUNAGADH.—Engraved on the pedestal of an image, this Nagari inscription in Sanskrit language is dated Vikrama 1230 (A.D. 1174) and states that the image in question is that of *Mahamatya* Jaja.

9. INSCRIPTIONS, STATE MUSEUM, PRABHAS PATAN, DISTRICT JUNAGADH.—A Sanskrit inscription in Nagari characters of about the fourteenth century, engraved on a stone slab containing the figure of a standing man, states that Somabrahma was the son of *Bhata* Shi(Khi)ma, the son of *Tha* Lunasi, obviously of the Vaghela family of Kankroli. Another inscription, dated Vikrama 1656 (A.D. 1599), records the renovation of a *Dharmasala* by a certain Dedaji, son of Jaitunga Vanaviraji during the reign of the Rathoda ruler Rayasimha.

10. ROCK ENGRAVINGS, KATESHWAR CAVE, DISTRICT KUTCH.—A number of symbols are engraved on the walls and on one pillar inside the cave, a few of them resembling symbols found on the Indus Valley seals.

11. RASHTRAKUTA CHARTER, TARSADI, DISTRICT SURAT.—Inscribed on three copper plates, which are strung together in a ring, to which is attached a seal bearing the royal emblem of Garuda, this charter in Sanskrit language and Nagari characters of the ninth century, records a grant, made by king Amoghavarsha I from his capital Manyakheta, of the village Karmantapura (Kamrej) situated on the bank of the river Tapi. The donee was a *brahmana* named Bhatta Latadeva of Haritagotra. It was composed by Haragupta.

JAMMU AND KASHMIR

12. INSCRIPTION, KHUNMOH, DISTRICT SRINAGAR.—An inscription, in Sarada characters and Sanskrit language and dated Kali year 4530 and Laukika year 4 (A.D. 1428-29), belongs to the reign of Jayanolavadenasaha (i.e., Sultan Zain-ul-abidin, A.D. 1420-70). It mentions a *brahmana* Chhindaka as *desadhipati* and as a resident of Khonamosa and records the building of an *asrama* by the merchant Purnaka, also a resident of Khonamosa. The inscription contains references to the king Khagendra, the Jayapida-durga founded by the king Jayapida and the places Satisaras and Khonamosa, all known from Kalhana's *Rajatarangini* (cf. *Antiquities of Chamba State,* Part I, p. 258).

13. INSCRIPTION, S.P.S. MUSEUM, SRINAGAR, DISTRICT SRINAGAR.—An inscription, on the pedestal of a bronze image of Bodhisattva, in Sarada characters of the tenth-eleventh century A.D. and Sanskrit language, refers itself to the reign of queen Didda and seems to record the making of the image. The date portion is badly worn-out. It is interesting to note that the queen is mentioned in the inscription as Diddadeva and that, in her only other known inscription, also from Srinagar, she is referred to as *rajan* in the masculine gender.

14. INSCRIPTION, S.P.S. MUSEUM, SRINAGAR, DISTRICT SRINAGAR.—This inscription from Jammu Rajauri, in Sanskrit verse and Nagari characters, contains the text of five stanzas, called *pancharatna,* composed by *Maharaja* Chandrachudasimhavarman in Vikrama 1768 (A.D. 1711) in praise of the god Amaranatha.

15. INSCRIPTION, SUDH MAHADEV, DISTRICT UDHAMPUR.—This illegible inscription, in Sanskrit language and southern characters of about the seventh century, engraved on the shaft of a broken iron *trisula,* mentions such rulers as Vibhunaga and Ganapatinaga. It is interesting to note that these rulers also figure in another trident-inscription at Gopeshwar, District Chamoli, Uttar Pradesh.

MADHYA PRADESH

16. INSCRIPTION, MALLAR, DISTRICT BILASPUR.—This badly-damaged inscription, in two pieces, written in Sanskrit language and Siddhamatrika characters of the seventh-eighth century A.D., seems to record a grant of the village Goksharapadraka by king Balarjuna, obviously of the Pandava dynasty.

17. CHAULUKYA INSCRIPTION, BILPANK, DISTRICT RATLAM.—Dated Vikrama 1198 (A.D. 1141-42), this inscription, in Sanskrit verse and Nagari characters, states that Jayasimhadeva, the Chaulukya ruler of Gujarat, had the dilapidated temple of Virupaksha renovated at the time of his visit to the Malava country conquered by him. The eulogy was composed by the poet (*kavichakravarttin)* Sripala.

18. TERRACOTTA SEALS AND POTSHERDS, UJJAIN, DISTRICT UJJAIN.—Two seals discovered from ancient mounds here bear legends in Asokan Brahmi characters and in Prakrit language. One of them reads *Paradhammano* and the other reads *Dhamadattasa.* Two pot-sherds, also discovered from ancient mounds, bear writings in Asokan Brahmi and Prakrit language. One of them reads *Datasa* while the other reads *Somadattasa.*

19. PARAMARA INSCRIPTION, UJJAIN, DISTRICT UJJAIN.—This inscription, dated Vikrama 1160 (A.D. 1103-04), records the grant of land for the maintenance of a perpetual lamp (*akshayadipika)* by king Naravarman in memory of his elder brother Lakshmadeva. Their father *Paramabhattaraka Maharajadhiraja Paramesvara* Udayaditya is also mentioned.

20. INSCRIPTION, VIDISHA, DISTRICT VIDISHA.—This fragmentary and damaged inscription, in Sanskrit language and Nagari characters, is dated Vikrama 1216 (A.D. 1159) and seems to record the construction of a temple for the god Varaha and grants made to the same. A certain king named Trailokyavarman is mentioned in the epigraph.

MAHARASHTRA

21. INSCRIPTION, PAITHAN, DISTRICT AURANGABAD.—This Marathi inscription from the Jogesvari temple is dated Saka 1654 (A.D. 1732) and records the obeisance of Jivana-rao Malhar to the goddess Jogesvari.

22. INSCRIPTION, CHINCHLA, DISTRICT BIR.—This stone inscription, in Sanskrit language, dated Saka 1272 (A.D. 1350) records a grant of land made by a certain Raghudeva to the deities Kumara Changadeva and Chikkadeva.

23. INSCRIPTION, RENAPUR, DISTRICT BIR.—This Marathi inscription in the Naganath temple is dated Saka 1638 (A.D. 1716) and states that the inscription was written by Kanhoji and Bangaji.

24. INSCRIPTION, MEHKAR, DISTRICT BULDANA.—This Sanskrit inscription engraved on the pedestal of a Jaina image is dated Saka 1272 (A.D. 1350) and mentions *Acharya* Srikirtti and records the obeisance of *Sreshthin* Simha of the Kandhara family.

25. INSCRIPTION, PATNE, DISTRICT JALGAON.—Dated in Saka 1075, Srimukha (A.D. 1153-54), this inscription in Sanskrit verse and Nagari characters, contains a genealogical account of the Nikumbha-*vamsa*. It records the construction of a temple for Siva (Madana-dahana) by the ruling Nikumbha chief Indraraja while Changadeva was serving as his minister. It is also stated that Govana, son of Indraraja, made a grant of the village Devasangama to the deity with the consent of his mother Sridevi. (cf. *Indian Antiquary,* Vol. VIII, p. 39, where the inscription is wrongly assigned to Govana III with his mother Sridevi as the regent, taking king Indraraja to be dead at the time of the record).

26. INSCRIPTION, KESHEGAV, DISTRICT OSMANABAD.—This stone inscription in Marathi language, dated Saka 1528 (A.D. 1606), records a grant by Mansifdar of Vaghali and Keshegav, of the village Vaghare, to the goddess Shyamai.

27. INSCRIPTION, PANGHRI, DISTRICT OSMANABAD.-This Marathi inscription, dated Saka 1386 (A.D. 1464), records some money-grants made to the temple of Mahadeva.

28. INSCRIPTION, TER, DISTRICT OSMANABAD.—Dated in Saka 1520 (A.D. 1598), this Sanskrit inscription mentions Parsvanatha and Mahavira-Vardhamana-chaityalaya and the village Ter.

29. INSCRIPTION, ARANDESHVAR, DISTRICT PARBHANI.—This inscription in Marathi language is dated Saka 1121 (A.D. 1199) and mentions a certain Ramachandra-Mahanayaka and Mahasena.

30. JAINA IMAGE PEDESTAL INSCRIPTIONS, JINTUR, DISTRICT PARBHANI.—Of the three inscriptions in Sanskrit language found here, one, dated Saka 1140 (A.D. 1218), mentions Jintura and records the obeisance of the descendants of Devendrakirtti. Another record, dated Saka 1514 (A.D. 1592), records the obeisance of Lakshmisena and others. The third inscription, dated Saka 1530 (A.D. 1608), mentions Vardhamanatirthan-karachaityalaya and the place Jintura.

31. SILAHARA INSCRIPTION FROM BASSEIN, DISTRICT THANA.—This badly worn out inscription, in Sanskrit and local language and Nagari script, is dated in Saka 1120 and the cyclic year Kalayukta (A.D. 1198). It refers itself to the reign of a Silahara king *Maharajadhiraja Paramesvara* Anantadeva. This ruler was not hitherto known from any other source.

MYSORE

32. EARLY CHALUKYA CHARTER, HULI, DISTRICT BELGAUM.—This undated charter, in Sanskrit language and Telugu-Kannada characters, belongs to the time of Mangalaraja *alias* Ranavikranta, the brother of Kirttivarman I and the uncle and predecessor of Pulakesin II. It records that, on the orders of the king, Ravisakti, son of Kannasakti, belonging to the Sendraka family and the Naga race, made a grant of fifty *nivarttanas* of cultivable land to the temple of Santinatha in the village of Kiruvattakere. The gift was entrusted to the care of Abhayanandi, disciple of Srinandi of Paralura-sangha (*1968-69,* p. 47, no. 18).

33. INSCRIPTION, AIHOLE, DISTRICT BIJAPUR.—Engraved in Kannada language and characters of about the eighth-ninth century A.D., this undated inscription refers to a gift of land made by the 'Five Hundred', who constituted the *maha-chaturvidya-samudaya* of Aryyapura and to the stipulations (*samaya*) regarding the same. The inscription was written by Baladeva.

34. EARLY KADAMBA INSCRIPTION, BANAVASI, DISTRICT NORTH KANARA.—This damaged and fragmentary inscription in box-headed characters of about the fifth century A.D. and in Sanskrit language, engraved on the four sides of a pillar, gives the genealogy of the Kadambas from Kakusthavarman to Mrigesavarman.

35. WESTERN GANGA COPPER-PLATE INSCRIPTION, KUKKANUR, DISTRICT RAICHUR.—This record, in Sanskrit language and Telugu-Kannada script, is dated Saka 890 (A.D. 968). It belongs to the time of the king Marasimha who is stated to have been ruling over Gangakandarppadhavala-*vishaya* and Gangapadi-96000. It reveals the fact that he had an elder sister named Kundanasami who was perhaps devoted to Jainism. The record registers a grant, made by this lady, of the village Addavurage, situated in Dhavala-*vishaya,* to the *brahmana* Kelaparya-bhatta, son of Rudra, belonging to Kasyapa *gotra.*

36. COPPER-PLATE INSCRIPTIONS, SURATKAL, DISTRICT SOUTH KANARA.—Three copper-plate charters were available with a private gentleman of the place. All the three charters are in Kannada language and script. One of them, dated Saka 1352 (A.D. 1430), belongs to the time of the Vijayanagara emperor Devaraya II. It records the grant of some tax-amounts to provide for a perpetual lamp and *amritapadi* to the god Vithaladeva of Uluru-matha at Pejavara. The recipient of the gift was Varadendratirtha-*sripada* and the governor of Mangaluru-rajya then was Devaraja-odeya.

Of the other two charters, one is dated in Saka 1509 (A.D. 1587-88) and the other in Saka 1597 (A.D. 1675-76). They were issued by the local ruling family of the Bangas. While the former, belonging to the reign of Vira Narasimha-Sankaradevi *alias* Bangaraja-Vadiya, records the purchase of land by Paramesvara Holla, as *mulabalike,* the latter, issued by Vira Narasimha-Sankaradevi, records the grant of land, by a certain Rampayya,

after purchasing the same from the chief for the purpose of worship and offerings to the god Ramachandradeva installed in the Vyasaraya *matha* on the banks of the river Netra-vati.

37. COPPER-PLATE INSCRIPTION, UDIPI, DISTRICT SOUTH KANARA.—Dated in Saka 1597 (A.D. 1675-76), this charter, in Kannada language and characters, belongs to the reign of the Keladi ruler Somasekhara-nayaka and registers a gift of land situated in Hannarada-sime for the maintenance of a Saiva *matha* by his queen Chennammaji.

TAMIL NADU

38. HOYASALA INSCRIPTIONS, HOSUR, DISTRICT DHARMAPURI.—One inscription in Sanskrit language and Grantha characters, engraved on the south wall of the Vinayaka-*mandapa* in the Chandrachudesvara temple, records the death of the Hoyasala king Vira-Ramanatha in Manmatha, Pausha, su. 10, Rohini (A.D. 1295). It records also the consecration of Sambhu (Siva-*linga*) on the thirteenth day, after the death of the king, in a garden. A Tamil inscription, engraved in the same place and dated in Saka 1217 (A.D. 1295-96) in the reign of Hoyasala Vira-Visvanatha, records an order of the king to the *mathapatigal* of the temple of god Udaiyar Sevidanayanar in Sevidapadi, *sthanattar, jiyar* and *Virasola-anukkar* granting the income of 127 *pon* from *siddhayap-pon, rayasa-nivanda* and *kelvi-nivanda,* etc., collected from the *devadana* villages of the temple, for repairs to the temple, from the third regnal year. The order was allowed to be engraved on the *panchanga.* Another Tamil inscription, engraved on the north wall of the Kali-yamman temple and dated in Saka 1246 (A.D. 1325), records the assignment of the right to collect certain specified taxes such as *manaipanam, pudukkanikkai,* etc., in Masandi-nadu, Murasu-nadu and Erumai-nadu to the *Panchala* and one Singachari, son of Muddirai Devannan, by the Hoyasala king Vira-Ballala.

39. PALLAVA INSCRIPTION, DUSI, DISTRICT NORTH ARCOT.—This incomplete inscrip tion in Tamil language and characters of the ninth century A.D., engraved on the *tripatta-kumuda* of the north and south walls of the Vaikuntha Perumal temple, is dated in the twenty-fifth year in the reign of Pallava Vijaya-Kampavarman. It mentions Chittiramegatatakam in Kaliyur-kottam and seems to record a gift of land endowed to a deity called Irunda-Perumanadigal as *devadana* and made tax-free for conducting a festi-val for seven days from Visakam to Tiruvonam in the month of Vaikasi every year.

40. INSCRIPTION, DUSI, DISTRICT NORTH ARCOT.—This fragmentary inscription, in Tamil language and characters of about the tenth century, records the gift of: (1) a perpetual lamp by Uruppini, wife of Senan Namban for god Sri Krishna and consort *(nampirattiyar)* whose images are stated to have been installed by Namban Tiran of Tiyankudi; (2) ninety sheep by an individual for a lamp; and (3) land, made tax-free for food-offerings in the midday by another individual.

41. TELUGU-CHODA INSCRIPTION, ENADAVADI, DISTRICT NORTH ARCOT.—Dated in the eighteenth year of the reign of Vijayagandagopala and written in Tamil language and characters of the thirteenth century on a stone lying in a field to the west of the village, this inscription records the gift of 170 *kuli* of land to god Sikaranappillaiyar *alias* Alagiyapillaiyar in Chittiramelippallikkattu at *nadipadi..*

ARABIC AND PERSIAN INSCRIPTIONS[1]

DELHI

1. INSCRIPTION OF THE TUGHLUQS.—An epigraph of the time of Firuz Tughluq, from Mehrauli (Delhi), noticed before, has been found, on re-examination, to indicate the tomb of Khan-i-A'zam Alp Khan; it was built in A.H. 777 (A.D. 1375) by a nobleman whose name is illegible except for the appellation Kafur Khani.

2. ARABIC INSCRIPTION, DELHI.—A fragmentary inscription in Naskh script con taining attributes of God, was discovered from the ruins of Siri and is assignable to the Khalji period on palaeographical grounds.

3. INSCRIPTION OF THE REIGN OF SIKANDAR LODI.—A new inscription from the Dargah of Chiragh-i-Dihli, referring to the construction, in A.H. 923 (A.D. 1517) of a well, a tank and a garden under the governorship of Miyan Bahadur Khan in the reign of Sikandar Lodi, declares Bibi Haibat Khatun as their rightful owner.

MADHYA PRADESH

4. INSCRIPTION OF THE TUGHLUQS, DISTRICT DAMOH.—A new inscription of Ghiyathu'd-Din Tughluq Shah (pl. LVII A), found at Kathora, mentions Ikhtiyaru'd-Din Juljin as the governor of the region and Jalalu'd-Din Ahsan Husaini—the subsequent founder of the dynasty of the Sultans of Madurai—as his deputy. It bears the date 4th Jumada II 725 (18th May, 1325).

5. MISCELLANEOUS INSCRIPTIONS, DISTRICTS GUNA, GWALIOR, MORENA AND SHAJAPUR.—An inscription dated A.H. 938 (A.D. 1531) found at Gwalior, records the construction of a shop by Yar Muhammad, son of Maulana Buhlul Na'lband Kabuli. Another epigraph from the same place, containing a lengthy eulogy of a famous saint Khwaja Khanu (d. A.H. 960 or A.D. 1533-34), records the completion of his tomb in A.H. 1008 (A.D. 1600) and quotes the name of 'Abdu'r-Rahman, son of Sulaiman Bani Israil of Lahore, with the pen-name Khatmi, as its composer and writer. An epigraph found at Shahdara, District Guna, records that a mosque and a well were constructed by Khwaja Yaqut 'Arab, son of Fath Hirawi in A.H. 1041 (A.D. 1632). According to an ins cription from Nurabad, a caravansarai,.called Sara-i-Nurabad, was constructed by Mu'tamad Khan in A.H. 1072 (A.D. 1661-62). Another record, from the same place, assigns the construction of a well for the use of the public, to Jamal in A.H. 1080 (A.D. 1669-70). On re-examination of one published epitaph from Chanderi, it was found that the date of the demise of Bahadur Shah is A.H .1096 (A.D. 1684) and not A.H. 1094 (A.D. 1682). An epigraph found at Kanar, District Shajapur, records that a mosque founded in A.H. 1096

[1] Dr. Z. A. Desai, Superintending Epigraphist for Arabic and Persian Inscription of the Survey, Nagpur, assisted by Shri A. A. Kadiri, and Shri M. F. Khan, Epigraphical Assistants, found, copied, examined and reported on about three hundred inscriptions during the year including those above, except No. 4 which was received from the Deputy Director of Archaeology and Museums, Madhya Pradesh, Bhopal, and Nos. 2 and 3 which were discovered by Sarvashri M. G Joshi and B. M. Pande and Shri W. H. Siddiqi respectively of the Headquarter's Office, New Delhi.

(A.D. 1684-85) by Sayyid Muhammad Shahid, son of Mir Abdul-Wahid, son of Qadi-Muhammad Qasim, was completed in A.H. 1109 (A.D. 1697-98).

6. INSCRIPTIONS OF THE SULTANS OF MALWA, DISTRICT GUNA —A previously published epigraph from Chanderi mentions the governor Malik-i-Sharq Nasir and the Majmu'dar Juk(g?)a, son of Baigu. Another published inscription from the same place, recording the construction of the Bala Ghatti gateway and the room above the tank in the name of Khanzada J(or Ch)iman Khan, son of Sher Khan, during the reign of Ghiyathu'd-Din, was re-examined; it was set up in A.H. 906 (A.D. 1501) and not A.H. 900 (A.D. 1495), as deciphered earlier.

7. INSCRIPTIONS OF THE MUGHALS, DISTRICTS GUNA AND MORENA.—New inscrip tions of Aurangzeb, ranging in dates from A.H. 1070 (A.D. 1659-60) to A.H. 1113 (A.D. 1701-02), were found at Chanderi and Nurabad, District Morena. They mention two saintly personages, one epigraph supplying, in particular, the information that one of them used to ride a lion and hold a snake in his hand in place of a whip, and also that the land for the garden constructed along with a mosque and a well by one Sharif was gifted by Raja Durjan Singh, the Jagirdar of Chanderi.

RAJASTHAN

8. INSCRIPTIONS OF THE KHALJIS, DISTRICT NAGAUR.—A new epigraph of Qutbu'd-Din Mubarak Shah, found at Khatu Kalan, locally called Bari Khatu, recording the construction of a mosque in A.H. 720 (A.D. 1320), by Muzaffar, son of Umar, known as Baha, names Amir Malik Taju'd-Din as the governor.

9. INSCRIPTIONS OF THE MUGHALS, DISTRICT NAGAUR.—An epigraph of Aurangzeb, found at Didwana, is dated A.H. 1074 (A.D. 1664). Another record of the emperor from the same place, assigning the construction, in A.H. 1076 (A.D. 1665-66), of a mosque in the quarter of blacksmiths to Nura, 'Idu, and Firuz, all blacksmiths, names Mirza Muhammad 'Arif as the governor and Hafiz 'Abdullah Ansari Nagauri, as its scribe. Another inscription of Aurangzeb, found at Khatu Kalan records the construction of a mosque in the Mahalla Mominan in A.H. 1077 (A.D. 1667). Yet another epigraph of Aurangzeb, found at Didwana, records the construction of a mosque by Faqir 'Inayat, a disciple of Shah Muhabbat Dhimali (or Wisali), in A.H. 1091 (A.D. 1680). One more epigraph of Aurangzeb, from the same place, dated Rajab 1, A.H. 1097 (14th May, A.D. 1686), records the name of cobbler Darya as having supervised the construction of a mosque; it also mentions Piru, Billu 'Idu, of the same community. An inscription of Muhammad Shah, found at Parbatsar, records the construction of the mosque dedicated to Badi'ud-Din Shah Madar, in Vikram Samvat 1788 (A.D. 1731). An epigraph set up in A.H. 1273 (A.D. 1857), in the reign of the last Mughal emperor Sira'ud-Din Bahadur Shah, was found at Didwana.

10. INSCRIPTIONS OF THE TUGHLUQS, DISTRICT NAGAUR.—A new but fragmentary record of Tughluq Shah' was found at Ladnun. A fresh epigraph of Firuz Shah, from the same place, recording the construction of a mosque in A.H. 780 (A.D. 1378) gives the interesting *alias* of its builder 'Alau'd-Din, son of Mubarak, as Jikh, son of Bhoja Mothal.

It further provides an interesting piece of information that Ikhtiyaru'd-Din Shaupan, (son of 'Uthman) was the governor.

11. INSCRIPTIONS OF THE KHANZADAS, DISTRICT NAGAUR.—An epigraph found at Ladnun (and not Didwana, as stated in *Epigraphia Indo-Moslemica,* 1949-50 pp. 21-22, Pl. X c, where its inaccurate reading was published), records the repairs carried out to a fort and the erection of the gate of the *qasba* Ladnun by its governor and Faujdar Maliku'sh-Shraq Ibrahim J(or Ch)iman Khan Kishlu Khani, in A.H. 887 (A.D. 1482) during the reign of Firuz Khan, the work having been supervised by As'ad, son of Rukn Tak and Kanja.

12. INSCRIPTION OF THE SURS, DISTRICT NAGAUR.—A new record of Islam Shah, found at Nagaur, records the construction of a well by Miyan Hasan, son of 'Uthman Batani in A.H. 959 (A.D. 1552).

13. MISCELLANEOUS INSCRIPTIONS, DISTRICT NAGAUR.—An epitaph from Nagaur supplies the interesting information that the great Malik, the master of pen and sword, Malik Qutbu'd-Din Najm, the deputy of the *shiq* of Nagaur and Jalor, attained martyrdom in the service of God (i.e. in a battle) in A.H. 791 (A.D. 1389). Another epigraph, from Didwana, refers to the construction of the palace of Raja Kishan Singh as having taken place in A.H. 1143 (A.D. 1730-31). A bilingual record, from the same place, dated A.H. 1272 (A.D. 1855-56), prohibits that the shops belonging to the Dargah of Hadrat Sultan Mahmud Pir Pahadi, should not be mortgaged or the rent accruing from them should not be misappropriated.

. UTTAR PRADESH

14. MISCELLANEOUS INSCRIPTIONS, DISTRICTS AGRA, ALLAHABAD, BARABANKI, LUCK-NOW, PRATAPGARH AND RAE BARELI.—A number of fragmentary epigraphs assignable on palaeographical grounds to the 13th-15th centuries were found at Kara. An inscription dated A.H. 818 (A.D. 1415), found at Dewa, District Barabanki, records the construction of a mosque by Malik Tuti. Four epigraphs, found at Shahpur, District Pratapgarh, record the construction of a mosque dedicated to Miran Sayyid Muhiyud-Din Qutb Muhammad Khuda' i Qadiri, by Humayun Khan-i-Khanan Qadiri, in A.H. 972 (A.D. 1665). Another inscription from the same place, giving the latter's full name as Miyan Humayun Khan-i-Khanan Qadiri Farmuli, describes how he brought, in A.H. 977 (A.D. 1569-70), the Holy Foot-Print of the Prophet Muhammad from Shergarh and placed it in the mosque dedicated to the afore-mentioned saint. An epitaph, dated A.H. 980 (A.D. 1580-81), found at Kakori, District Lucknow, records the death of Ya'qub Sultan. Another epitaph, found at Churyari, District Agra, supplies the interesting information that a brave warrior Muhammad Yar died in Kashmir in A.H. 994 (A.D. 1586). An epitaph, dated A.H. 1037, (A.D. 1627-28), of Khwaja Daulat, a saint 'who was matchless in his time', was found at Kakori. Another epitaph, from Amethi, gives A.H. 1040 (A.D. 1630-31) as the date of the demise of the saintly Shaikh 'Abdu'l-Halim. An epigraph, from the same place, recording the construction of a mosque by Khairu'n-Nisa, in A.H. 1040 (A.D. 1630-31), states that the builder, better known, as.Makhaduma-i-Jahan *alias* Khubhi, had endowed half of the land she inherited, for the expenses of the mosque and the other half for arranging

propitiatory prayers. An epigraph, found at Allahabad, records the construction of a mosque in A.H. 1051 (A.D. 164142) by Khwaja Sadiq. Two epigraphs, found at Shahzad-pur, in the same District, record the construction of a mosque in A.H. 1054 (A.D. 1644-45), carried out at the instance of Sayyid Muhammad Ashraf Mirza, under the supervision of Ghiya-thu'd-Din. An inscription found at Bhita, same District, records the construction of a domed pavilion, in A.H. 1055 (A.D. 1645-46) at the instance of Sha'ista Khan, the supervisor being Muhammad Sharif. An epitaph, dated A.H. 1068 (A.D. 1657-58), found at Daranagar, in the same District, refers to the martyrdom, which took place at Arwal (in Bihar), of Sayyid Faidu'llah. An epigraph from Jais, District Rae Bareli, records in a chronogram composed by Husaini, the construction of a mosque by Shaikh 'Abdu'l-Karim in A.H. 1085 (A.D. 1674-75). An inscription, found at Allahabad, composed by 'Abdu'1-Qawi Ilahabadi, records the demise of Gul Muhammad, and the construction of a mosque, a well, a tank and a tomb with a garden for his merit by his wife in A.H. 1160 (A.D. 1747). Another epitaph, dated A.H. 1186 (A.D. 1772), from the same place, records the death of Aqa Muhammad Rabi', son of Aqa Muhammad Redi, son of Aqa Hussain Khunsari (i.e. of Khusar in Iran). A fragmentary epigraph, found at Allahabad, assignable on palaeographic grounds to the eighteenth century, records the endowment of four *bighas* of land for a mosque and a garden.

15. INSCRIPTION OF THE MAMLUKS, DISTRICT ALLAHABAD.—A fragmentary epigraph of Qutbud-Din Aibek was found at Kara (pl. LVII B).

16. INSCRIPTION OF THE KHALJIS, DISTRICT ALLAHABAD.—A unique but slightly fragmentary inscription was discovered on a pillar lying in the Allahabad Museum. It was set up in the reign of Maliku'l-Ma'ali Sikandaru'th-Thani A(or I)krit Khan Sultani and contains the name of Maliku'sh-Sharq Amiru'l-Umara Qa'im Ikrit Khani, who was very probably his deputy in the region (pl.LVII C).

17. INSCRIPTIONS OF MUGHALS, DISTRICTS ALLAHABAD, LUCKNOW AND UNNAO.—An epigraph of the time of Akbar, found at Amethi, District Lucknow, records the death of a renowned saint Shaikh Nizam, and assigns the construction of his tomb to Tardi Baig Sultan. An epigraph of Aurangzeb, found at Rasulabad, District Unnao, assigns the construction of a mosque in the town of Rasulabad to Azamatullah. Another inscription of Aurangzeb, found at Allahabad, records the construction of a caravansarai by Khwaja Abul-Qasim in A.H. 1100 (A.D. 1688-89). Another record of Aurangzeb, dated A.H. 1109 (A.D. 1697), was found at Amethi. One more inscription of Aurangzeb, found at Kara, is badly damaged; it refers to the construction of some edifice in a certain *sarkar* near the provincial capital of Ilahabad, which took place in A.H. 1114, Vikrama Samvat 1780 (A.D. 1703).

An epigraph of Qutbu'd-Din Muhammad Shah 'Alam I, found at Allahabad, records that the old Jami' mosque was earlier repaired under the orders of Shah Jahan Sayyid Zahirud-Din Muhammad Ridawi Bukhari, was lying desolate for some time after having been damaged by the non-Muslims, and on a personal representation made to the emperor by Sayyid Nasiru'd-Din 'Ali, a grandson of the aforesaid Sayyid, a royal order was issued in the name of Mir Muhammad Ahsan Khan, the Diwan, for its repairs which commenced on the 22nd Dhu'l-Qa'da 1122 (1st January 1711); a total amount of rupees two thousand seven hundred was spent on the repairs and the supervisor was Khwaja Muhammad Mu'min.

WEST BENGAL

18. INSCRIPTIONS OF THE SULTANS OF BENGAL, DISTRICT MALDA.—A new but fragmentary inscription of Ghiyathu'd-Din A'zam Shah was found at Hazrat Pandua. A new but badly-damaged inscription of 'Alaud-Din Husain Shah was found at old Malda; it records the construction of a Jami' mosque by him. A new but fragmentary inscription of Nasiru'd-Din Nusrat Shah, recording the construction of some gateway by the king, was found at Malda. Another inscription of the same king from Malda, published more than once, was re-examined to ascertain the name of the builder which has been variously read by different scholars; it is Bona Malati.

19. MISCELLANEOUS INSCRIPTION, DISTRICT MALDA.—A new record from Malda gives the cost of the construction of a mosque, carried out in A.H. 1140 (A.D. 1727-28) by one Qasim, as one thousand rupees.

III. NUMISMATICS AND TREASURE-TROVE[1]

GUJARAT

1. GADHAIYA COINS, RAJULA, DISTRICT AMRELI.—Thirty-two silver and copper coins, recovered from Rajula (Taluka Rajula), are under chemical treatment in the laboratory of the Baroda Museum and Picture Gallery.

2. INDO-MUSLIM COINS, KHERALU, DISTRICT MAHESANA.—A hoard of one hundred and six copper coins was received in the Office of the Superintending Archaeologist, Western Circle, Baroda, from the District Magistrate, Mahesana. It includes issues of Ghiyathu'd-Din, Firuz Shah and Muhammad of the Tughluq dynasty and coins of Mahmud Shah I, Qutbud-Din Ahmed Shah II and Muzaffar Shah II, Sultans of Gujarat.

3. JAINA IMAGES, VASAI, DISTRICT MAHESANA.—A treasure-trove of ten Jaina marble images was acquired and handed over to the Curator, Watson Museum, Rajkot.

4. GADHAIYA COINS, CHOILA, DISTRICT SABAR KANTHA.—One thousand and eighty silver coins, found in the village of Choila (Taluka Bayad), are under chemical treatment in the laboratory of the Baroda Museum and Picture Gallery.

MAHARASHTRA

5. MUGHAL COINS, BALAPUR, DISTRICT AKOLA.—A treasure-trove of two hundred and fifty-six coins of the Mughal emperor, Aurangzeb, after their forfeiture by the Government of Maharashtra, was kept in the sub-treasury of Balapur.

6. MUGHAL COINS, HIRPUR, DISTRICT AKOLA.—A large number of the Mughal copper coins *(fulus),* weighing 1670 kilograms, were discovered at a ruined site in Hirapur (Taluka Murtizapur).

7. MUGHAL COINS, POHA, DISTRICT AKOLA.—A discovery of forty-six silver issues of the Mughal emperor, Aurangzeb was made in the farm of Shri Ganapat Madhav Chalisgaon in the village of Poha (Taluka Karanja).

8. BAHMANI COINS, GEVARDHA, DISTRICT CHANDA — Shri Chango Jagalu Thivar discovered a hoard of the Bahmani copper coins, weighing more than twenty kilograms, at Gevardha (Taluka Gadhchiroli).

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[1] Information from: 1, 3 and 4, the Director of Archaeology, Gujarat State; 2, the Superintending Archaeologist, Archaeological Survey of India, Western Circle; 5-17, the Director of Archives and Archaeology, Maharashtra State; 10, the Curator, Central Museum, Nagpur; 18, the Deputy Director, Cultural Affairs, Orissa State; 19, the Curator, Rajasthan Museum, Ajmer; 20-23, the Director of Archaeology and Museums, Rajasthan State; 24, the Director of Museums, Government Museum, Madras; 25, the Secretary, Education Department of the Government of Tripura; and 26, the Deputy Secretary, Education Department of the Government of Uttar Pradesh.

9. MISCELLANEOUS COPPER COINS, PANTONAL, DISTRICT JALGAON.—Four copper coins were found at Pantonal (Taluka Chalisgaon). They include issues of Muhammad bin Tughluq, Sultan Mahmud Shah III of Gujarat and the Kutch ruler Khengarji III.

10. MISCELLANEOUS COINS, CENTRAL MUSEUM, NAGPUR.—The Museum cabinet was enriched by the addition of one hundred and fifty-one copper and silver coins received as a share of the treasure-trove distributed by the State Museum, Lucknow. These include early Indian and Mughal coins. The Museum also received a treasure-trove of twenty-nine silver coins from Katol (District Nagpur). They are the issues of the Mughal emperors, Akbar, Jahangir and Aurangzeb.

11. MUGHAL COINS, DONGAON, DISTRICT NANDED.—Eighty-one silver coins of the Mughal emperors, Shah Jahan and Aurangzeb, were encountered while digging the foundation-pit of a building at Dongaon (Taluka Villoli).

12. COPPER COINS, DISTRICT NASIK.—Five copper coins of Chhatrapati .Shivaji, secured by the Collector, District Nasik, were presented by the Government of Maha rashtra to Shri Y. B. Chavan, the Union Home Minister.

13. MUGHAL COINS, CHAUNDI, DISTRICT PARBHANI.—A hoard of fifty copper coins of the Mughal emperor, Aurangzeb, came up during digging operations within a small fort at Chaundi (Taluka Hingoli).

14. GADHAIYA COINS, PAHENI, DISTRICT PARBHANI.—Forty-three silver coins were found on a road at Paheni (Taluka Hingoli).

15. MUGHAL COINS, PARVA, DISTRICT YEOTMAL.—One hundred and forty-eight silver coins of the Mughal emperors, Shah Jahan and Aurangzeb, were discovered at Parva (Taluka Kelapur).

16. COPPER COINS, SHRI CHHATRAPATI SHIVAJI MAHARAJ MUSEUM, SATARA.—Three Shivarai copper coins were received in the Museum.

17. MISCELLANEOUS SILVER COINS, DISTRICT YEOTMAL.—Two hoards—one of one hundred and twenty-five coins of the Native States issued in the names of the Mughal emperors and the other of twelve silver issues of the Mughal emperors, Alamgir II and Shah Alam II—were reported.

ORISSA

18. MISCELLANEOUS OBJECTS, STATE MUSEUM, ORISSA.—The State Museum was enriched by the collection of seventeen gold coins, five hundred and thirty-nine silver punch-marked coins, twenty-five coins of other metals and four gold articles. Thirteen of the gold coins—Ganga *fanams*—were collected from Puri, while the remaining four were discovered at Banai (District Sundargarh).

RAJASTHAN

19. GADHAIYA COINS, RAJASTHAN MUSEUM, AJMER.—The Museum purchased ten Gadhaiya coins.

20. COPPER COINS, SAGRODA, DISTRICT BANSWARA.—The Department of Archaeo logy and Museums, Rajasthan State, acquired eight hundred and fifty-nine copper coins, possibly issues of the Mughal rulers.

21. SILVER COINS, BHADASAR, DISTRICT CHURU.—Sixty-four late Mughal coins were received by the Department of Archaeology and Museums, Rajasthan State.

22. SILVER COINS, SARDAR MUSEUM, JODHPUR.—The Museum acquired two silver issues of the Arab rulers of Sindh from the Tehsildar of Merta.

23. COPPER COINS, NIMODA, DISTRICT KOTA.—A treasure-trove of two hundred and sixty-eight copper coins was acquired by the Department of Archaeology and Museums, Rajasthan State. The coins are under examination.

TAMIL NADU

24. MISCELLANEOUS COINS, GOVERNMENT MUSEUM, MADRAS.—The Museum acquired two Venetian gold coins received as a treasure-trove from Pollachi (District Coimbatore), eighty-nine silver coins of Shah Alam II, received also as a treasure-trove, from Dharmapur (District Coimbatore), one silver Caliphate coin from Mayuram (District Thanjavur) and one gold Kongu Chera coin.

TRIPURA

25. GOLD COINS, TRIPURA MUSEUM.—The Tripura Museum acquired a gold coin similar to no. 19 of pl. XXIV of Allan's *Catalogue of Gupta Coins in the British Museum. A* debased imitation of the Gupta gold coins and referable to the seventh century A.D., it is an issue of a ruler of eastern Bengal.

UTTAR PRADESH

26. MISCELLANEOUS OBJECTS, STATE MUSEUM, LUCKNOW.—The Museum received seventeen hoards containing three thousand six hundred and six coins, a few silver ornaments and several protohistoric copper implements under Treasure-Trove Rules from various District in the State. The implements are under chemical treatment and study. The coins include issues of the Kushans, Indo-Sassanians, Mughals and other medieval dynasties.

IV. OTHER IMPORTANT DISCOVERIES

BIHAR

1. BRICK STUPA, BAKRAUR, DISTRICT GAYA.—Shri P. K. Sharan of the Survey noticed a ruined brick *stupa* at Bakraur near Bodh Gaya.

2. SIVA TEMPLE, DUREJEE, DISTRICT SARAN.—Shri B. N. Prasad of the Survey dis covered a temple of the seventeenth century at Durejee.

GUJARAT

3. LATE AND POST-HARAPPAN SITE, BET DWARKA, DISTRICT JAMNAGAR.—Sarvashri S. Ananda Sastry and H. K. Chaturvedi of the Survey explored the island of Bet Dwarka, off Okha Port, in the gulf of Kutch and discovered remains of the late Harappan, post-Harappan, early historical and medieval settlements.

4. LATE STONE AGE SITE, PATHARIA, DISTRICT PANCH MAHALS.—Late Stone Age tools were picked up by Shri K. D. Tripathi of the Survey on the bank of the Vishvamitri at Patharia near Khakher Falia. The collection includes, apart from cores and flakes, a few points.

DELHI

5. MEDIEVAL SCULPTURE, DELHI.—A stone sculpture showing a three-legged Saiva image of *circa* fifteenth century A.D. was found within the area between Hauz-Khas Enclave and Moth-ki-Masjid. Sherds of glazed pottery and large soakage-jars, internally plastered with lime, were discovered at the site by Shri M. C. Joshi of the Survey.

HARYANA

6. PAINTED GREY WARE SITE, SIHI, DISTRICT GURGAON.—Shri Anil Mitra of the St. Xaviers School, Delhi, discovered some sherds of the Painted Grey Ware on a mound near the village of Sihi, about 3 km. north-east of Ballabgarh.

KERALA

7. MEGALITHIC SITE, KAVUMGUMPRAYAR, DISTRICT ALLEPPEY.—A cist chamber with roof and floor-slabs complete, was discovered while quarrying at Kavumgumprayar, Puramattom, Tiruvalla. According to the Director of Archaeology, Kerala, it yielded rusted and broken iron implements and a polished stone axe.

8. MEGALITHIC SITE, DISTRICT CALICUT.—**The** Director of Archaeology, Kerala, reported the discovery of two megalithic sites. One of the two sites is located within the jurisdiction of the village of Charode (Taluka Badagara) where, while quarrying at

Vykkilassery-desom, a circular rock-cut cave was noticed. The relics collected are bowls and dishes of the Black-and-red Ware and rusted iron implements. They have been collected for the Trichur Archaeology Museum.

MADHYA PRADESH

9. MEDIEVAL SCULPTURES, BUDHI CHANDERI, DISTRICT GUNA.—Shri Raghbir Singh, assisted by Shri H. R. Sreedhara of the Survey, recovered nearly twenty-five hundred Brahmanical and Jaina sculptures from Budhi Chanderi. Notable among the sculptures, referable to the tenth and eleventh centuries A.D., are the images of Surya (pl. LVIII A), Ganesa (pl. LVIII B), Nataraja, Sarasvati, Brahma, Agni, Ardhanarisvara (pl. LIX A), Ambika and Tirthankaras and the figures of a *nayika* and a band of musicians and a dancer (pl. LIX B).

10. MEDIEVAL SCULPTURES, PARSULIA, DISTRICT RAJGARH.—Several sculptures of Tirthankaras were noticed at Parsulia by Shri C. B. Trivedi of the Survey. One of them bears an inscription in characters of the fourteenth century A.D.

MAHARASHTRA

11. CHALCOLITHIC SITE, WALKI, DISTRICT PUNE.—Drs. Z. D. Ansari and M. K. Dhavalikar of the Deccan College Postgraduate and Research Institute, Pune, dis covered a chalcolithic site near the confluence of Bhima and Mula, about 3 km. east of the village of Walki (Taluka Dhond). Spread over an area of about 2 acres, the cultural deposit is 1.5 m. thick. To judge by the pottery, the site was first occupied by the bearers of the Malwa culture, who were ultimately followed by the people using the Jorwe Ware.

MYSORE

12. SCULPTURES, AIHOLE, DISTRICT BIJAPUR.—Shri S. R. Rao of the Survey reported the discovery of several sculptures encountered during the clearance-work at Aihole. Noteworthy among them are a seated stone figure of Kubera (1-5 m. high), torso of a bejewelled female figure of the early Chalukya period, an image of the boar incarnation of Vishnu and a Jaina figure, the last two assignable to the eighth century A.D.

NORTH EAST FRONTIER AGENCY

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13. MEDIEVAL FORT, ITA, DISTRICT SUBANSIRI.—Shri S. K. Mukherjee of the Survey noticed a fort with huge brick walls and carved door-frames near the Pachim river in the foot-hills of the Himalayas.

ORISSA

14. POLISHED STONE AXE, BHUBANESWAR, DISTRICT PURL—Shri S. K. Mukherjee of the Survey found a polished stone celt in the exposed section of the base of a mound located on the right side of the bridge over the Gangua river on the Bhubaneswar-Puri Road.

15. PREHISTORIC ROCK-SHELTER, HEMAGIRI, DISTRICT SUNDARGARH.—The Director, Cultural Affairs, Government of Orissa, reported the discovery of a prehistoric rock-shelter in the Hemagiri reserve forest. The shelter bears paintings depicting hunting of animals, a dancing-scene and animals.

RAJASTHAN

16. JAINA BRONZES, SANOLI, DISTRICT ALWAR;—The Director of Archaeology and Museums, Rajasthan, reported the discovery of six bronze images of the Tirthankaras at Sanoli. Ascribable to the tenth and eleventh centuries A.D., the images are under worship by the villagers.

17. EARLY MEDIEVAL SCULPTURES, JHALRAPATTAN , DISTRICT JHALAWAR.—A few sculptures, assignable to the seventh and eighth centuries A.D., were discovered in the bed of the Chandrabhaga by Shri C. B. Trivedi of the Survey.

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TAMIL NADU

18. SCULPTURES, GANGAIKONDACHOLAPURAM, DISTRICT TIRUCHCHIRAPPALLI.—The Director of Archaeology, Government of Tamil Nadu, reported the discovery of an image of Durga (pl. LX A) within a small roofless shrine on the Veerareddi street in Gangaikonda cholapuram, the ancient capital of the Cholas. The image, which originally belonged to the regime of the Chalukyas, was brought in the Tamil Nadu probably as a war-trophy during the rule of the Imperial Cholas.

Three sculptures, belonging to the region of Kalinga, were noticed at Chengamedu in Meikavalputhur, a suburb of Gangaikondacholapuram. Made of red sandstone, two of the images represent Siva as Bhairava (pl. LX B) and the third, Bhairavi. Most probably, they were brought to Gangaikondacholapuram by Rajendra I after his victorious march up to the Ganga.

19. PANDYA SCULPTURES, RAJAKKALMANGALAM, DISTRICT TIRUNELVELI.—According to the report of the Director of Archaeology, Government of Tamil Nadu, twenty-six sculptures, mostly mutilated, were brought to light at Iraniyan Kudiyiruppu, a hamlet of Rajakkalmangalam. The sculptures, assignable to the eighth century A.D., represent various deities like Vishnu, Saptamatrikas, Devi, Dikpalas and Grahas. Three of them bear, on their base, inscriptions, one being damaged. While one of them, below a two-armed figure, reads *Satakratu* (i.e., Indra), the other, also below a two-armed figure, reads *Kuja.*

TRIPURA

20. STONE AND BRONZE IMAGES, PILAK—The Secretary, Education Department, Government of Tripura, reported the discovery of several stone and bronze images, mostly of the Buddhist pantheon, at Pilak. They have been removed to the Tripura Museum.

UTTAR PRADESH

21. ANCIENT MOUND, MADANPUR, DISTRICT DEORIA.—Shri A. D. P. Singh of the Survey noticed a huge mound at Madanpur. The site yielded sherds of the Painted Grey Ware and the Northern Black Polished Ware, terracotta figurines and an antimony rod.

22. NORTHERN BLACK POLISHED WARE, BAHRI, DISTRICT JAUNPUR.—Sherds of the Northern Black Polished Ware were discovered at Bahri by Shri A. D. P. Singh of the Survey.

23. STONE SCULPTURES, BANAURA, DISTRICT JAUNPUR.—Shri M. L. Das of the Survey found sculptures ascribable to the Pala period at Banaura.

24. STONE SCULPTURES, SARANGDIH, DISTRICT JAUNPUR.—Several sculptures of the Pala period were noticed at Sarangdih by Shri A. D. P. Singh of the Survey.

WEST BENGAL

25. LATE TEMPLE, MALLARPUR, DISTRICT BIRBHUM.—Shri R. G. Pandeya noticed a temple dedicated to Siva at Mallarpur. Decorated with carved laterite slabs, the temple, of the Bengali hut type, is ascribable to the eighteenth century A.D.

V. RADIOCARBON DATES[1]

The radiocarbon dates,[2] presented statewise below, were measured by the Tata Institute of Fundamental Research, Bombay, during the current year. The dates have been calculated on the basis of 5730 years for the half-life of radiocarbon. For converting them to A.D./B.C. scale, 1950 A.D. has been used as the reference year.

ANDHRA PRADESH

1. PALAVOY, DISTRICT ANANTAPUR

(i) TF-699. ASH-MOUND Modern
Carbonaceous clay; layer 2;
Iron slag was found with the sample.
(ii) TF-700. NEOLITHIC CULTURE 3490 ± 100 (1540 B.C.)

Carbonaceous ash (dung), layer 7; depth 2.1 m; Sample No. 2.

2. BANDLAMOTTU HILL, DISTRICT GUNTUR

(i) TF-805. OLD COPPER WORKINGS 900 ± 80 (A.D. 1050)
Burnt Wood; Sample No. Ag/B/Wo2.
(ii) TF-806. OLD COPPER WORKINGS 655 ± 90 (A.D. 1295)
Wood; Sample No. Ag/B/W/1.

GUJARAT

3. NICORA, DISTRICT BHARUCH

(i) TF-900. LATE QUATERNARY 12.31 ± 0.34% Modern Caliche collected from the Narmada river bank; Sample No. 3.
(ii) TF-901. LATE QUATERNARY 10 ± 0.36% Modern
Caliche collected from the Narmada river bank; Sample No. 3.
Comment: As caliche is not formed in the normal carbon-cycle processes, the C

[1] Contributed by Dr. D. P. Agrawal, Shri S. K. Gupta and Km. Sheela Kusumgar.

2 Sample 1, 17, 20, 21, 23 and 28 submitted by the Deccan College Postgraduate and Research Institute, Pune; 2 by the Agaigundla Copper-bed Project, Bollapalli; 3 by the M. S. University of Baroda; 4-14, 19 and 22 by the Tata Institute of Fundamental Research, Bombay; 15 by the Geological Survey of India, Calcutta; 16 and 27 by K. Nielson, Cochin Port Trust; 18 and 24 by the National Institute of Oceanography, Panaji; 25 by M.C.A. Mine, Kolar; 26 by K. S. Karanth, Puttur; 29, 31 and 34 by the Archaeological Survey of India; 30 and 37 by the Birbal Sahni Institute of Palaeobotany, Lucknow; 32 by the Director of Archaeology, Tamil Nadu; 33 by the Benaras Hindu University; and 35 and 36 by the Geological Survey of India, Lucknow. Further details can be had from the submitting organizations.

measurement cannot be used as a regular C^{14} date; hence the C^{14} activity is expressed as percentage of modern standard.

4. ARAMRA, DISTRICT JAMNAGAR

TF-907. LATE QUATERNARY 27840 + 1340 (25890 B.C.)
− 1210

Coral from an emerged reef near the village; Location No. 24; Sample No. 1.

5. BARDIA, DISTRICT JAMNAGAR

TF-905 (A). LATE QUATERNARY 14990 ± 190 (13040 B.C.)

Pieces of coral from an emerged reef; Location No. 29; Sample No. l(a).
Comment: Sample contains about 10% calcite.

6. BHIMRANA, DISTRICT JAMNAGAR

TF-908. LATE QUATERNARY 5430 ± 110 (3480 B.C.)

Shells from a raised beach deposit; Location No. 23; Sample No. 1.

7. OKHA, DISTRICT JAMNAGAR

TF-906. LATE QUATERNARY >45,000

Coral from an emerged reef; Location No. 27; Sample No. 1.

8. SALAYA, DISTRICT JAMNAGAR

TF-911. LATE QUATERNARY 5220 + 105 (3270 B.C.)

Coral from an emerged reef near the port; Location No. 20; Sample No. 1.

9. SAURASHTRA COAST, DISTRICT JAMNAGAR

TF-1014. SUB-RECENT/RECENT 6185 ± 115 (4235 B.C.)
Coral, pure arogonite; Sample No. 1; Field No. C.R. 1.
(ii) TF-1015, SUB-RECENT/RECENT 4575 ± 105 (2625 B.C.)
Coral, pure aragonite; Sample No. 2; Field No. C.R. 2.

10. PORBANDAR, DISTRICT JUNAGADH

TF-902. LATE QUATERNARY 36070 + 5500 (34120 B.C.)
− 3290

Shells from a raised beach deposit; Location No. 33; Sample No. 1.

11. VISAWARA, DISTRICT JUNAGADH

TF-903. LATE QUATERNARY 28515 + 1400 (26565 B.C.)
− 1225

Coral from an emerged roof; Location No. 32; Sample No. 1.

12. SURAJBARI, DISTRICT RAJKOT

(i) TF-927. LATE QUATERNARY 4820 ± 105 (2870 B.C.)
Shells; depth 7 m.; Sample No. 3; Field No. RH 27(d)/3.
(ii) TF-930. LATE QUATERNARY 3830 ± 105 (1880 B.C.)
Shells; depth 4.9 m.; Sample No. 3; Field No. RH 27(C)/3.
(iii) TF-932. LATE QUATERNARY 6795 ± 100 (4845 B.C.)
Shell; depth 16 m.; Sample No. 7; Field No. RH 24/7.

13. KHARAGODA, DISTRICT SURENDRANAGAR

(i) TF-917. LATE QUATERNARY 7035 ± 110 (5085 B.C.)
Wood; depth 5.4 to 6.1 m.; Location 2. NaOH pretreatment was given.
(ii) TF-919. LATE QUATERNARY 6075 ± 110 (4125 B.C.)
Shells; depth 2.6 to 2.9 m.; Location 2.
(iii) TF-920. LATE QUATERNARY 7060 ± 115 (5110 B.C.)
Wood; depth 2.4 to 3.5 m.; Location 1. NoOH pretreatment was given.

14. KUDA, DISTRICT SURENDRANAGAR

(i) TF-913. LATE QUATERNARY 6500 ± 95 (4550 B.C.)
Shells; depth 5.7 m.; Location 17.
(ii) TF-914. LATE QUATERNARY 6100 ± 110 (4150 B.C.)
Shells; depth 7.9 to 8.2 m.

HIMACHAL PRADESH

15. SUNDERNAGAR, DISTRICT MANDI

TF-1021. POST-GLACIAL OR HOLOCENE 2690 ± 100 (740 B.C.)
Wood fragments from West Ropa; depth 4 m.

KERALA

16. WILLINGTON ISLAND, DISTRICT ERNAKULAM

TF-965. POST-GLACIAL SEDIMENTS 8315 ± 125 (6365 B.C.)
Root of tree from Willington Island; depth 16.75 m.; Field 1; Sample No. 1.
Comment: Sample derived from post-glacial marine or back-water sediments.
NaOH pre-treatment was given.

MADHYA PRADESH

17. KAYATHA, DISTRICT UJJAIN

TF-974. CHALCOLITHIC CULTURE 3585 ± 100 (1635 B.C.)
Charcoal; from Trench KTH-B; Layer 19; Field No. KTH-B 1466.

MAHARASHTRA

18. TF-969. CONTINENTAL SHELF OFF BOMBAY 145 ± 95 (A.D. 1805)

Branched coral; depth 96 m.; Sample No. 42(b).

19. ERANGAL BHATTI, DISTRICT BOMBAY

(i) TF-938. LATE QUATERNARY 1765 ± 95 (A.D. 185)
Shells; depth 0.8 m; Field Madh/2; Sample No. 3.
Comment: All the above samples consisted of consolidated comminuted shells from raised beach, which represents a Holocene Transgression.
TF-972 and TF-938 indicate some disturbance.
(ii) TF-972. LATE QUATERNARY 2730 ± 95 (780 B.C.)
Shells; depth 0.6 m.; Field 2, Pit 1; Sample No. 2.
(iii) TF-981. LATE QUATERNARY 5070 ± 105 (3120 B.C.)
Shell; depth 2.9 m.; Field pit 1; Sample No. 6.

20. DHOM-DAM, DISTRICT KOLHAPUR

TF-1004. LATE QUATERNARY 39590 + 9200
− 4245 (37640 B.C.)

Shells from a lenticular body of a pebble conglomerate occurring at a depth of 18*3 m. from the terrace surface and about 300 m. from the left bank of the Krishna.

21. INAMGAON, DISTRICT PUNE

(i) TF-1003. LATE QUATERNARY 21725 +630
-585 (19775 B.C.)

Shells collected from a pebble conglomerate occurring about 2 m. from the modern bed of the river Ghod.
(ii) TF-922. CHALCOLITHIC CULTURE 3295 ± 100 (1345 B.C.)
Charcoal from Mound 1; Trench C3; Layer 5; depth 1.3 m.; Field No. 63.
(iii) TF-923. CHALCOLITHIC CULTURE 2975 ± 170 (1025 B.C.)
Charcoal; Trench C2; layer 5; depth 1.8 m.; Field No. 133
NaOH pre-treatment was given.
(iv) TF-924. CHALCOLITHIC CULTURE 3225 ± 200 (1275 B.C.)
Charcoal from section scrapings from 1st and 2nd floors; layer 2; Field No. 139.
NaOH pre-treatment was given.

MINICOY ISLANDS

22. (i) TF-1017. EXPOSED CORALS 1620 ± 90 (A.D. 330)

Coral; pure aragonite; depth 3 m.; Field No. A5; Sample No. 2.
(ii) TF-1022. EXPOSED CORALS Modern
Coral; pure aragonite; depth 0.9 m.; Field No. A 11; Sample No. 3.

MYSORE

23. KODEKAL, DISTRICT GULBARGA

TF-748. NEOLITHIC 4410 ± 105 (2460 B.C.)

Charcoal; Trench 2; layer 4; depth 2 to 3 m.; Field No. 948.

24. CONTINENTAL SHELF OFF KARWAR

TF-983. 9135 ± 130 (1785 B.C.)
Moluscan shells; depth 58 m.; Sample No. 653.

25. KOLAR GOLD MINES, DISTRICT KOLAR

TF-879. OLD WORKINGS 1500 ± 115 (A.D. 450)
Wood from Kolar mine 50 m. level in No. 2 Shaft area. Old workings have associated bones, pottery, and wood. The strata contain lot of water.

26. COONDAPOOR, DISTRICT SOUTH KANARA

TF-814. >45,000
Submerged mangrove (?) plants; depth 6.12 to 9.2 m.
Comment: NaOH pre-treatment was given.

27. KULUR, DISTRICT SOUTH KANARA

TF-966. RIVER SEDIMENTS 38445 +6150
-3490 (36495 B.C.)

Root of tree from Gurupur river; depth 13.7 m.; Sample No. 2; Field 2.

RAJASTHAN

28. BAGOR, DISTRICT BHILWARA

(i) TF-786. BAGOR CULTURE 6430 ± 200 (4480 B.C.)
Charred bones; Trench EIV; Layer 2; depth 1.17-1.26 m.; Field No. BGR-5.
Comment: Anthracite mixed.
(ii) TF-1005 and TF-1006. BAGOR CULTURE 4060 ± 90 (2110 B.C.)
Charred bones; Trench EII; depth 73.88 cm; Field No. BGR 1968-9, EIII-5-6
(iii) TF-1007. BAGOR CULTURE 5785 ± 130 (3835 B.C.)
Charred bones; Trench El; depth 99-1.10 cm; Field No. BGR 1968-9, EI-4.
(iv) TF-1009! BAGOR CULTURE 4715 ± 105 (2765 B.C.)
Charred bones; Trench GIII; depth 89-98 cm; Field No. BGR 1968-9, GIII-12.
(v) TF-1012. BAGOR CULTURE 5235 ± 90 (3285 B.C.)
Charred bones; Trench GV; depth 1.31-1.40 m.; Field No. BGR-9, GV-19.

29. KALIBANGAN, DISTRICT GANGANAGAR

(i) TF-942. HARAPPA CULTURE 4175 ± 115 (2225 B.C.)

Charcoal; Trench KLB-2; Locus XAI, QD. 5; Layer 12; depth 3.45 m.; Field No. 1967-68/4/KLB-2.

(ii) TF-946. HARAPPA CULTURE 3715 ± 105 (1765 B.C.)
Wood charcoal; Trench KLB-2; Locus ZNI, Qd. 1; Layer 7; depth 2.25 m.; Field No. 1967-68/ 18/KLB-2.

(iii) TF-986. HARAPPA CULTURE 3775 ± 90 (1925 B.C.)
Wood charcoal; Trench KLB-2; Locus C5, Qd. 3; Layer 34; depth 5.2 m.; Field No. 1967-68/21/KLB-2.

(iv) TF-984. HARAPPA CULTURE 3930 ± 100 (1980 B.C.)
Wood charcoal; Trench KLB-2; locus C5, Qd. 3; Layer 22; depth 3.1 m.; Field No. 1967-68/22/KLB-2.

30. SAMBHAR LAKE, DISTRICT JAIPUR

(i) TF-883. LATE QUATERNARY 4510 ± 110 (2560 B.C.)
Organic debris; depth 1.35-1.5 m.; Field No. S2/135-150; Sample No. RC-6.

(ii) TF-884. LATE QUATERNARY 6235 ± 110 (4285 B.C.)
Organic debris; depth 1.85-1.95 m.; Field No. S2/185-195; Sample No. RC-7.

(iii) TF-886. LATE QUATERNARY 7375 ± 120 (5425 B.C.)
Organic debris; depth 2.85-2.95 m.; Field No. S2/285-295; Sample No. RC-9.

(iv) TF-887. LATE QUATERNARY 9250 ± 130 (7300 B.C.)
Organic debris; depth 3.15-3.25 m.; Field No. S2/215-325; Sample No. RC-10.

TAMIL NADU

31. PAIYAMPALLI, DISTRICT NORTH ARCOT

TF-833. NEOLITHIC (?) 3310 ± 210 (1360 B.C.)
Charcoal from Tr. XF1, Qd. 2; layer 8; depth 1.9 m.; Field No. PMP/8.
Comment: As the sample was small, anthracite was mixed for counting.

32. KORKAI, DISTRICT TIRUNELVELI

TF-987. 2755 ± 95 (805 B.C.)
Wood; locus 0-1; Layer 5; depth 3.17 m.; Field No. KRK-1.

UTTAR PRADESH

33. BHITARI, DISTRICT GHAZIPUR

TF-989. GUPTA PERIOD 1665 ± 90 (A.D. 285)
Charcoal; Trench BTR 2; Ao; depth 3.8 m.; Field No. BTR-2.

34. SONKH, DISTRICT MATHURA

TF-921. EARLY HISTORIC 2030 ± 95 (80 B.C.)
Charcoal; Probe I; Qd. E 19; depth 11.60 m.

35. MEJA DAM, DISTRICT MIRZAPUR

TF-822. Modern 130 ± 90 (A.D. 1820).

Wood; depth 2 m.; Field No. MEJA/4.

36. MOOSKHAND DAM, DISTRICT VARANASI

TF-821. RIVERBANK DEPOSITS Modern

Wood; depth 3 m.; Field No. MKD/3.

WEST BENGAL

37. SANKRAIL, DISTRICT HOWRAH

(i) TF-850. LATE QUATERNARY 2615 ± 100 (665 B.C.)
Peaty clay; depth 1.36 m.; Sample No. 1.
(ii) TF-851. LATE QUATERNARY 4075 ± 100 (2125 B.C.)
Peat; depth 1.82 m.; Sample No. 2.
(iii) TF-853. LATE QUATERNARY 4925 ±110 (2975 B.C.)
Wood; depth 1.52 m.; Sample No. 4.
(iv) TF-855. LATE QUATERNARY 4720 ± 135 (2770 B.C.)
Peat; depth 3.04 m.; Sample No. 6.
(v) TF-856. LATE QUATERNARY 5810 ± 110 (3860 B.C.)
Peat; depth 6.2 m.; Sample No. 7.
(vi) TF-857. LATE QUATERNARY 5440 ± 115 (3490 B.C.)
Wood; depth not given; Sample No. 8.

VI. MUSEUMS

1. GOVERNMENT MUSEUM, MOUNT ABU.—The exhibits of the museum were classified. The labelling and cataloguing are in progress.

2. RAJPUTANA MUSEUM, AJMER.—The galleries were rearranged and display improved. Of the five new sculptures acquired by the Museum, two came from Baghera, District Ajmer. Gadhaia coins were also acquired by purchase.

3. ARCHAEOLOGICAL MUSEUM, AMARAVATI.—Shifting of sculptures from the old shed to the new Museum-building as well as formulation of the display plan was finalised. The work of preparing pedestals, show-cases and a model of the original Amaravati *stupa* is in progress.

4. ARCHAEOLOGICAL MUSEUM, AMBER.—Four show-cases were remodelled and steps taken for the safety of Museum exhibits. Two sculptures of Brahma and Vishnu of *circa* tenth century, besides five other pieces, were added to the Museum collection.

5. SHRI BHAVANI MUSEUM AND LIBRARY, AUNDH, DISTRICT SATARA.—Labels were provided to about seven hundred miniature paintings. The preparation of a catalogue of the exhibits is in hand. Special exhibitions were arranged during the Museums Week celebration in November, 1969.

6. STATE MUSEUM, BHARATPUR.—Three sculptures were added to the Museum collection.

7. ORISSA STATE MUSEUM, BHUBANESWAR.—The reorganization of the Prehistoric Gallery of the Anthropology Section was completed.

About twelve hundred palm-leaf manuscripts were collected during the year. These have been preserved, catalogued and displayed in the Gallery. The copying work of rare manuscripts for publication is in progress.

The rearrangement of Arts and Crafts Gallery was also completed. The new acquisitions in this Section include a Ganesa image of black chlorite and a *gajavirala* of wood, besides some traditional *patta* paintings and different *Veshas* of Lord Jagannath.

The re-organization of the Bird Gallery of the Natural History Section is in progress. A pair of elephant tusks and a skeleton of a chimpanzee have been added to the collection.

Among stone sculptures and architectural fragments acquired during the year, mention may be made of a Karttikeya image from Biraramachandrapur; a Varaha figure, a Buddhist miniature *stupa* and a figure of elephant rider from Gopinathpur area; images of Buddha and Kubera from Badachana area; *Siva-tandava* image and a *Ramayana* panel from Suklesvar area and architectural fragments depicting scenes of *rathayatra* from Teligarh, all situated in District Cuttack.

8. ARCHAEOLOGICAL MUSEUM, BIJAPUR.—Repairs to the ground floor were comple-

ted and steps taken to set up Sculpture and Inscription Galleries in both wings of the building.

9. G. G. J. MUSEUM, BIKANER.—The display in the Museum was re-organized.

10. ARCHAEOLOGICAL MUSEUM, BODHGAYA.—The work of preparing cement casts of the Sunga railings of the Bodhgaya temple was completed. A pavilion is to be shortly erected for display of the railings.

11. PRINCE OF WALES MUSEUM OF WESTERN INDIA, BOMBAY.—Among new acquisitions of the year, mention may be made of a grey stone Surya image of *circa* tenth century A.D. from central India, a lion's head of Mathura red sandstone of *circa* fifth century and a terracotta figure of lion attacking elephant from Mathura, belonging to *circa* fifth century.

Seven slotted-angle racks were purchased from the Government of India grants for the proper storage of stone sculptures in the reserve collection. New show-cases were put up in the Key-gallery for display of select stone sculptures, stucco and terracotta objects. Recording weights of coins in the reserve collection was continued.

The work in connection with the publication of a *Catalogue of Stone Sculptures* is in progress.

12. INDIAN MUSEUM, CALCUTTA.—From Ghoshpara, Bally, District Howrah, was acquired a unique terracotta plaque inscribed in Bengali and commemorating a case of concremation *(satidaha)* of a certain Brajanatha and his wife Vimala in B.S. 1206 (A.D. 1800), with its reverse showing the initials of one Sri Madhu Sudan Ghosh, who set it up in B.S. 1285 (A.D. 1879).

Of other acquisitions, mention may be made of a crowned female head of sandstone from Shahdol, District Shahdol, Madhya Pradesh and one hundred and thirteen silver and copper coins belonging to different periods, received as treasure-trove gifts from the State Museum, Lucknow.

A notable achievement was the inauguration, on the 12th April 1969, of a mobile exhibition on Indian archaeology on a "Museo-Bus", the first of its kind in India. The Museo-Bus, which accommodates twenty-eight dioramas, containing the replicas of tools, implements, sculptures, epigraphic records and numismatic specimens and models of evcavated sites and monuments, ranging from the prehistoric age down to the eighteenth century A.D., has so far covered 2627 kilometers while travelling through Hooghly, Howrah North, 24-Parganas, Murshidabad, Midnapore and Burdwan Districts of West Bengal. So far, more than four lakhs of rural people have seen the exhibition.

The recently-acquired *satidaha* plaque was displayed in a separate gallery for a temporary exhibition, with an informative note about the history of 'widow-burning' in India.

Some of the stone sculptures belonging to the Museum were sent to Osaka, Japan, for the World Exposition (Expo 1970) and were displayed in two separate pavilions, *viz.,* India's Art Pavilion in the Buddhist Art Exhibition, organised by the Government of India, and the International Art Pavilion, sponsored by the Japan Association.

Old labels were replaced in the Sculpture Galleries of the Kushan and Pala periods by new labels on perspex sheets. The background walls in the Epigraphy, and Bronze Galleries were repainted and plaster-cast exhibits in the Maurya and Sunga Galleries

were mended. The Amaravati Gallery was illuminated with new lighting arrangements and background painting. Individual labels were provided for the exhibits in the show-cases of the Bronze Gallery.

13. BHURI SINGH MUSEUM, CHAMBA.—Fifty-four art-objects including ancient Indian coins were added to the Museum collection during the year under report. Twenty Punch-marked coins of silver, acquired from a goldsmith at Arki, Simla hills, were reported for the first time from this part of the Himalayas.

Six silver coins of the Indo-Sassanian type, found in a village near Chamba town were also acquired, besides a sculpture in wood representing Buddha in the Indo-Tibetan style of *circa* twelfth century A.D. from District Lahul and Spiti and three stone carvings, one from Chamba town and two from village Baraur, near Chamba town.

A Chamba *rumal* with pictures of eight *nayikas* embroidered neatly on it, is a significant addition to the collection of Chamba *rumals* in the Museum.

Six wall-paintings, out of the large number originally removed from the Rang Mahal, Chamba, and preserved at the National Museum Laboratory, New Delhi, were brought back to Chamba in April, 1969 after about seven years and were suitably displayed in the Museum. An expert examined them after some eight months and no deterioration of any kind was noticed.

Work for the construction of a new building for the Museum started in August, 1969 and is making good progress.

14. GOVERNMENT MUSEUM, CHITORGARH.—Seventeen paintings and thirty-six sculptures were acquired and displayed in the Painting and Sculpture Galleries.

. 15. CHANDRADHARI MUSEUM, DARBHANGA.—Of the acquisitions made during the year, mention may be made of ten silver coins of Muslim period, forty-two Nepalese and Tibetan bronze sculptures of Buddha, Tara, Ganga and Narasimha and a Vishnu image (pl. LXI) of soapstone gifted by Kumar Jeeveshwar Singh of Rajnagar.
A catalogue of select sculptures and other archaeological finds has been published. Public lectures on subjects connected with museology and ancient culture were delivered during the year and particularly during the Museum Week in November, 1969. The Museum is to be shifted to its new building shortly.

16. ARCHAEOLOGICAL MUSEUM, RED FORT, DELHI.—A phased programme for the reorganization of this Museum, including setting up of the Bahadur Shah Period Room, was prepared. As a first step, materials and exhibits worth Rs. 34,000 were purchased.

17. NATIONAL MUSEUM, NEW DELHI.—The acquisitions included six terracottas, five sculptures, sixteen bronzes and four copper implements. The noteworthy acquisitions are copper antennae swords from Mahesana, Gujarat; Sunga terracottas from Kaushambi showing female figurines and amorous couples in different poses and two moulds showing a *yaksha* and a couple; a stone image of standing Vishnu from Mathura belonging to the Gupta period (pl. LXII A) and bronzes datable t othe Pallava period. Among bronzes, an image of Kaliyadamana-Krishna (pl. LXII B) is of remarkable delicacy.

18. MUSEUM OF ART AND ARCHAEOLOGY, DHARWAR.—This Museum, attached to the Karnatak University and Kannada Research Institute, has added two new Photo-

graphic Galleries. One of them traces the evolution of the Kannada script through inscriptions (pl. LXIII A-B) ranging from the third century B.C. to the fifteenth century A.D., while the other displays the growth of Karnataka architecture.

19. ASSAM STATE MUSEUM, GAUHATI.—The Museum acquired twenty copper-plate land-grants of the Ahom kings, two stone sculptures, one representing a pair of female heads and the other a temple design, and a cannon. The last one, found at Tinsukia, District Lakhimpur, is engraved with two inscriptions; the one in Persian refers to the manufacture of the cannon in A.H. 1018 (A.D. 1609) in the reign of Shah Alamgir by one Abdul Karim, while the other, in Sanskrit, records that Raja Gadadhara Singha, having vanquished the Muslims at Gauhati, obtained this weapon in Saka 1604 (A.D. 1682). The Museum also acquired a huge tub and a tray of brass, a scroll painting of the Bodo tribe and a pair of drums, besides pottery specimens of early historical cultures of north India from the Archaeological Survey of India, as a gift.

20. ARCHAEOLOGICAL MUSEUM, HALEBID.—A new gallery was set up in the structure adjoining the Open Air Museum for the display of wood-carvings, copper-plate inscriptions, coins, etc. Additional flood-lights were provided for strengthening security arrangements.

21. GOVERNMENT CENTRAL MUSEUM, JAIPUR.—About one thousand miniatures were photographed in black and white and some in colour. Exhibitions were arranged on Indian Miniatures and Western Art. Twenty-seven sculptures were added to the Museum-collection.

22. SARDAR MUSEUM, JODHPUR.—The Museum exhibits were re-classified and properly labelled. Cataloguing of the articles has been undertaken and the work is in progress. Eight images were added to the Museum-collection, including a Mahishamardini sculpture, dated Vikrama 1500, and a brass image of Jina Santinatha, dated Vikrama 1505.

23. ARCHAEOLOGICAL MUSEUM, KHAJURAHO.—Photographic documentation of all antiquities was completed. Sixteen sculptures, belonging to early Chandella style, were added to the collection. Security measures were strengthened by shifting smaller antiquities to the store-room, provision of grills and installation of 'Instalite' emergency light.

24. KOLHAPUR MUSEUM, KOLHAPUR.—The Art Gallery was rearranged and made more attractive. The work of documentation of the exhibits was taken up in hand. The Museum Week was celebrated in November, 1969 during which lectures, demonstrations and exhibitions were arranged.

25. ARCHAEOLOGICAL MUSEUM, KONARAK.—The documentation work, begun earlier, was completed.

26. ARCHAEOLOGICAL MUSEUM, KONDAPUR.—Two hundred Andhra coins were acquired by the Museum through local villagers.

27. MUSEUM AND SARASVATI BHANDAR, KOTA.—Some sculptures and coins were acquired for the Museum, in addition to a large cannon. Among sculptural acquisitions, may be mentioned five Jaina images of the ninth century A.D. from Atru, District Kotah.

28. STATE MUSEUM, LUCKNOW.—A temporary exhibition of acquisitions made during the last five years was arranged in the Kaiserbagh building of the Museum. Specimens of archaeological interest and textile pieces, such as *pashmina* shawl, brocades, *jamdanis* and *chikan* work were kept on show, besides articles of semi-precious stones, silver-wares, glass-wares and musical instruments.

On the occasion of the Gandhi Centenary, an exhibition was held of the tribal art and culture of Uttar Pradesh with special reference to the cultural life of the Tharu, Jaunsari and the Korwa tribes.

Consisting of eight showcases, covering the span of ancient Indian history from the earliest times to the twelfth century A.D., 'History through Ages Exhibition' has been organized as a permanent mobile exhibition. Each period of this vast age is illustrated by representative plaster-cast models, coins, photographs and specimens of pottery. Arranged in artificial movable showcases, accompanied with explanatory labels and tape-recorder talk, this exhibition serves as an effective teaching aid for school and college students.

A silver coin of the Mughal emperor, Shah Shuja, dated A.H. (10) 68, and a terracotta Kushana figure of an animal-headed god with a child seated on each of his shoulders (pl. LXIV C), are important acquisitions for the year.

29. GOVERNMENT MUSEUM, MADRAS.—The metal sculptures and objects acquired as treasure-trove finds included: Navanita Krishna, Krishna crawling, Narasimha with his consort and Lakshmi from Royapuram, Taluk Mannargudi, District Thanjavur; Vishnu seated, Yoganarasimha and Venugopala from Mangalam, Taluk Tiruchengode, District Salem; Balasubrahmanya (?), Devi, Nandi and a tripod from Devarkandanallur, Taluk Nannilam, District Thanjavur; three figures of Krishna crawling and one vessel from Rajagopalapuram, Taluk Mayuram, District Thanjavur; and Nataraja, Devi and Ganesa from Kothangudi, Taluk Tiruthuraipundi, District Thanjavur.

The wood-carvings added to the Museum-collection comprised Tripurantaka, Mahishamardini and Trivikrama, purchased from Sri Uktavadeswara Devasthanam, Kuttalam, District Thanjavur; an erotic scene, an unidentified image (Sadasiva?) and Tripurantaka, purchased from Sri Sundareswara Devasthanam, Kiranattukaruppur, Taluk Kumbakonam, District Thanjavur; Krishna stealing butter and lady adorning herself, purchased from Sri Parimala Ranganatha Swami Devasthanam, Tiru Indalur, Taluk Mayuram, District Thanjavur; and Krishna in the midst of Gopis and Rama aiming at the golden deer, purchased from Sri Damodaranarayana Perumal Devasthanam, Tirukkan-nangudi, Taluk Nagapattinam, District Thanjavur.

A stone sculpture of Devi from Mangudi, Taluk Nannilam, District Thanjavur, and another of Sundaramurti from Pamani, Taluk Tiruthuraipundi, District Thanjavur, were acquired as treasure-trove finds. A sculpture of Lingodbhava from Koilur Hills, District North Arcot, was presented by the District Forest Officer, Vellore, and two sculptures of Vishnu and Siva-Parvati of the Pala School were acquired by purchase.

Two diagrams showing the evolution and development of temple architecture were renewed.

Painted 'Sunmica' labels were provided for the exhibits in Rooms I and II of the

National Art Gallery, which acquired, by purchase, fifteen paintings of contemporary artists and miniature paintings.

30. GOVERNMENT MUSEUM, MANDORE.—Portraits of the old rulers of Mandore, Marwar, handicrafts and some biological exhibits were added to the Museum-collection.

31. ARCHAEOLOGICAL MUSEUM, MATHURA.—Fifty-four objects, including sculptures, terracotta figurines, coins and a terracotta seal, were added to the collection of the Museum. The seal shows the *nandipada* symbol and a few minute Brahmi letters in the Sunga script. The sculptures included two Kushan pieces representing a *salabhanjika* and a pot-bellied bull-faced *yaksha* with a grinning *yaksha* at the back.

Two showcases, representing a sequence of the pottery excavated by the German Archaeological Mission at Sonkh, District Mathura, were put up. A few showcases of the Terracotta Gallery were re-arranged.

An introductory *Guide-book to the Museum* was prepared and some important antiquities were published in the *Bulletin of Archaeology and Museums, U.P.*

The Museum participated in the Museum Week celebration in November 1969, the special features of which included enhanced timings of the Museum, special conducted tours for students and visitors, and lectures on Indian art by the Curator and other scholars.

32. ARCHAEOLOGICAL MUSEUM, NAGARJUNAKONDA.—During the year, more than eight hundred antiquities were re-accessioned and their index-cards and photographs prepared.

The Reserve Collection of sculptures was systematically arranged with location registers and plans. A register of the exhibited antiquities has also been prepared on similar lines. All the exhibits were provided with labels in English. Yard lighting has been provided all round the Museum and other security measures tightened up.

33. CENTRAL MUSEUM, NAGPUR.—The Anthropological and Archaeological Sections were given a face-lift and reorganized. The recent acquisitions to the Natural History Section included a group of tortoises and a peacock for which a diorama was prepared, while sculptures of the nude goddess (pl. LXIV A-B) were added to the Archaeological Section. The special exhibitions held during the year included those on icons, on postal stamps, on reproductions of foreign art, on butterflies from the Museum Reserve Collection and on select modern paintings from the Maharashtra State, besides those arranged during the Museum Week.

34. ARCHAEOLOGICAL MUSEUM, NALANDA.—A plan was prepared for the reorganization of Gallery No. 2. Security arrangements were strengthened by repairs to electrical fittings, improvement of locking arrangements and provision of Instalite and mercury vapour lamps.

.35. PATNA MUSEUM, PATNA.—The acquisitions to the Museum included a headless terracotta male figure of the Mauryan style from sewage excavation at Patna and five Pala sculptures of black basalt from District Monghyr, representing Trivikrama, Uma-Mahesvara, Vishnu, Bhairava and a crowned figure (Buddha?) under a tree (pl. LXV),

besides a hoard of 2162 billon coins of the Sharqi rulers of Jaunpur acquired from village Shahpur, District Saran.

36. ARCHAEOLOGICAL MUSEUM, SARNATH.—Security arrangements were improved by providing floodlighting and Instalite equipment and by strengthening the store-room. A scheme for reorganizing this Museum has been drawn up and will be executed in a phased programme. Photographic documentation is in progress.

37. CHHATRAPATI SHIVAJI MAHARAJ MUSEUM, SATARA.—This Museum, inaugurated on the 13th January, 1970, contains three galleries devoted respectively to weapons, pictures and miscellaneous collection including textiles, coins and inscriptions of the Maratha period. The exhibits in the Miscellaneous Gallery include copper and silver coins of Shivaji and later Maratha rulers and copies of selected stone inscriptions of the Maratha period.

38. ARCHAEOLOGICAL MUSEUM, SRIRANGAPATNA.—Two inscribed silver cups of Tipu Sultan were acquired. Labels were rewritten and steps taken to strengthen security arrangements.

39. TER MUSEUM, TER.—A Museum has been started at Ter out of the objects donated by Shri R. Lamture. A list of exhibits has been prepared.

40. ARCHAEOLOGY MUSEUM AND PICTURE GALLERY, TRICHUR.—The Museum is being reorganized. Select copies of mural paintings from various temples and churches are to be exhibited in one section and the rest to be stored as Reserve Collection.

A figure of Kaliyamardana-Krishna and an inscription in Vatteluttu have been added to the collection of the Site Museum at Krishnapuram. Miniature Kathakali figures mounted on pedestals have been displayed in glass showcases. The stone implements have been exhibited in newly-designed showcases with bilingual labels.

41. THE MUSEUM, TRIPURA.—The Museum-collection consists of stone and bronze sculptures, pottery, coins, copper-plates, medieval arms, textiles and paintings. The exhibits have been catalogued.

42. PRATAP SANGRAHALAYA, UDAIPUR.—Seventy-five paintings of the Mewar School were displayed in the Painting Gallery of the Museum and the coins were properly classified.

43. VIKRAM UNIVERSITY MUSEUM, UJJAIN.—A head of lioness, made of polished Chunar sandstone and belonging probably to the Mauryan period, was added to the Museum-collection. Other acquisitions included Paramara images and terracottas from various sites of Ujjain, fifteen copper coins from Kayatha and two copper plates, one bearing a *yantra* and the other a Sanskrit composition called *Hanumat-kavacha.*

44. MUSEUM AND PICTURE GALLERY, VADODARA.—The work of reorganization of the Archaeological Section was completed last year. To make this section fully representative, display screens were extended to accommodate some new south Indian sculptures

acquired from the National Museum, New Delhi, by exchange. A steel showcase was also added for the display of selected Akota bronzes.

Of the acquisitions made during the year, mention may be made of eight stone sculptures, three bronze figures, including one of Parsvanatha, from Akota belonging to *circa* seventh century A.D., a gold necklace from the excavated site at Rojdi (District Mahe-sana), a pair of copper-plates inscribed in the Brahmi script from Vadnagar (District Mahesana).

45. BHARAT KALA BHAVAN, VARANASI.—The recent sculptural acquisitions of the Museum comprised an inscribed architectural piece of the Sunga period from Bharhut, an image of Kubera of the Kushan period and a crocodile gargoyle of the Gupta period. The Museum also acquired three Sunga terracottas depicting an amorous couple, the escape of Udayana and the chained elephant of Udayana. Other acquisitions included prehistoric stone-tools, a copper-plate of the Pala period, eight gold coins, including one each of Huvishka, Vasudeva and Govindachandradeva, punch-marked silver coins and a large number of silver coins of the Sultanate, Mughal and Late Mughal periods.

46. ARCHAEOLOGICAL MUSEUM, VELHA GOA.—The Key Gallery was rearranged. A large bronze statue of Alfonso De Albuquerque, Governor General of Portuguese India, was acquired and erected in the Key Gallery. Other improvements included new arrange ment for the storage of paintings, repair and colouring of walls and preparation of pedestals for sculptures.

VII. ARCHITECTURAL SURVEY OF TEMPLES

NORTHERN REGION.—The Temple Survey Project, Northern Region, under Shri M. D. Khare, completed the second and third chapters of the monograph on 'The Pre-Gupta temples in India.' The second chapter discusses prehistoric religion and deals exhaustively with the evidence of protohistoric temples. The third chapter describes the pre-Gupta temples at Besnagar, Nagari, Bairat, Mathura, Sravasti, Kausambi, Nagarjuna-konda and Taxila (West Pakistan), .dating from *circa* fourth century B.C. to third century A.D.

Accordingly, drawings of the various symbols of religious import in the painted rock-shelters were prepared together with plans and significant details, pertaining to the different temples mentioned above.

The early shrines depicted in the bas-reliefs at Sanchi were also studied and their drawings made. Simultaneously, drawings of some of the Gupta and Khajuraho temples were also prepared.

SOUTHERN REGION.—The Temple Survey Project, Southern Region, under Shri H. Sarkar, continued the survey of temples in Kerala. More than one hundred temples situated variously in the Districts of Cannanore, Kozhikode, Malappuram, Ernakulam, Kottayam, Alleppey, Quilon and Trivandrum were surveyed during the period under review.

On the basis of the survey made, it is now possible to throw some light on the early phase of temple-architecture in Kerala. Unfortunately, these remains are represented mostly by ruined sites and a few old basements, containing inscriptions. The occurrence of inscribed *adhishthanas* may indicate the survival of old layouts in somewhat unaltered state. The early phase, which may have been preceded by a period of rock-architecture and sporadic temple-building activities, dates from about the beginning of the ninth century, coinciding roughly with the rise of the Kulasekharas, otherwise known as the second Chera dynasty of Thiruvanchikulam or Mahodayapuram. But the temple-building activities during the ninth century were patronized variously by the three dynasties — the Mushikas of the Mount Eli region, District Cannanore, the Kulasekharas of Mahodayapuram and the Ays of Vilinjam, of south Kerala. An inscription from the Krishna temple at Thirukulasegarapuram, near Thiruvanchikulam, District Trichur, provides the date of the beginning of that temple as A.D. 825 i.e., the initial year of the Kollam era of Kerala, while a similar evidence takes back the date of the construction of the Siva temple at Kandiyur, District Alleppey, to A.D. 823. Further, the Kudalmanikkam temple at Irinjalakuda contains a Vatteluttu inscription of Sthanu Ravi (A.D. 844-885) dated to about the middle of the ninth century. All these temples were perhaps built during the rule of the Kulasekharas. Of the Ay contributions, the most important ones are the Vishnu temple at Parthivasekharapuram, District Kanniyakumari, and the ruined circular Vishnu shrine enclosing a square *garbhagriha,* at Perumpaludur, District Trivandrum, both of them coming into existence during the time of the Ay king Karunandadakkan *(circa* A.D. 857-885). Moreover, their tutelary deity was Padmanabhasvami enshrined in the Padmanabhasvami temple at Trivandrum, sung by Nammalvar in the ninth century. That the Mushika kings also participated in the building of temples in different parts of their territory is evident from the Sanskrit work, *Mushika-vamsa,* the main source of history of the Mushikas of north Malabar. At least, there is one definite archaeological

evidence which supports the conclusion derived from the above-mentioned work, and it comes from the ruined temple-site at Eramam, District Cannanore, associated with an inscription of a Mushika king. The site, now virtually obliterated, has yielded remains of a square shrine facing east, a *mandapa* in front, a *balipitha,* besides a *nalambalam* enclosing all the structures, made of laterite blocks. A four-armed standing image of Vishnu, datable stylistically to about the tenth century A.D., has now been kept near the laterite *balipitha;* it shows marked Chalukyan influence.

From the tenth century onwards, the Cheras, under Goda Ravi Varma (*circa* 917-944), extended their supremacy practically all over Kerala; consequently, the development of temple-architecture there followed more or less a unified pattern with certain minor variations. The Kulasekharas, who ruled Kerala till about the beginning of the twelfth century, extended their patronage to the temple-building activities in the Chera country. There are about a score of temples associated with the inscriptions of the Chera rulers, some engraved on the mouldings of the *adhisthanas,* now carrying later super-structures. It was a period when the Cholas made a deep impact, both politically and culturally, on the life of the Chera people. Consequently, the, art-form and the temple-architecture in the Chera country were considerably influenced by the Chola tradition, specially in the southern Districts of Kerala. Certain features like the placement of a dwarf figure below the *pranala,* engraving inscriptions on the mouldings of the *adhis-thana* and the depiction of various scenes on the *paksha-silas* in the Kerala temples are reminiscent of the Chola-tradition. These components of the Kerala temples, specially in the central and southern districts, are made of granite and, in many instances, constitute the older vestiges of a temple whose superstructure underwent periodical renovation. Furthermore, the granite *dvarapalas* (pl. LXVI A), Vishnu and other images in several temples in District Trivandrum show unmistakable influence of the Chola tradition, while the temples in the central and northern Districts are associated with *dvarapalas* modelled in the late Vijayanagara or the Nayaka style. Perhaps the original wooden *dvarapalas* in many temples were replaced by stone ones during this period, when the front *man-dapas* or *balikal-mandapas* of several important temples like the Siva temple at Vaikam, District Kottayam, the Janardana temple at Varkkalla, District Trivandrum, and the Mahadeva temple at Valiyasalai, near Trivandrum, were decorated with sculptured pillars and other embellishments (pl. LXVI B).

So far as the ground-plans are concerned, not much development can be traced between the temples of the early phase and those of the later periods. However, the elliptical ground-plan, followed in the construction of the sixteenth-century Vaikam temple and the deserted basement, now used as *kuttambalam,* in front of the Mahadeva temple, at Chengannur, District Alleppey, seem to be later introductions. Three types of ground-plan, four-sided, circular and apsidal, were largely in vogue in the earlier period, though their distribution did not possibly follow a uniform pattern. Temples with four-sided plan have, more or less, an even distribution all over Kerala but circular ones have greater preponderance -in the southern half and it becomes rarer as one proceeds further to the north. In fact, it is non-existent in Mudbidri and Bhatkal groups of temples in the Kanara Districts of Mysore. Outside Kerala, in south India, there are only a few circular temples, *viz.,* the Vijayalayacholisvara temple at Narthamalai, District Tiruchchirappali, the Narasimha temple at Agara, Mysore, the Bhaktavatsala shrine at Belgola, Mysore, etc. Thus, the concentration of circular temples in southern Kerala may be due to factors quite unrelated to the general evolution of temple-architecture in the south. It is worthwhile to note that the circular temples occur in profusion in the region once under the

influence of Buddhism, as most of the Buddhist sites in Kerala are located in the Alleppey and Quilon region. Moreover, the internal layout of these circular shrines with a square or circular *garbhagriha* enclosed by a row or rows of pillars compares closely with the

Buddhist circular cave at Junnar on the one hand and the Ceylonese *Vata-dage* on the other. Some influence from Ceylon might have penetrated into Kerala in the trail of Irava

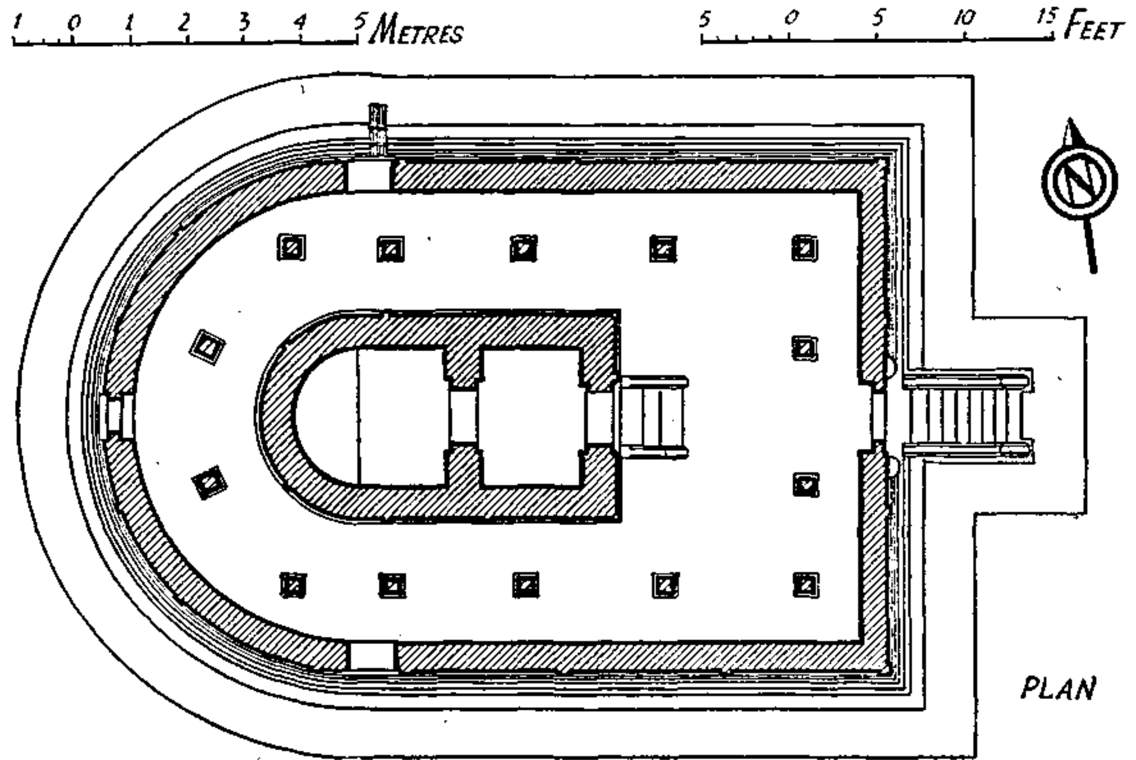


Fig. 9

migration during the early centuries of the Christian era, and it is also generally held that the Iravas were a Buddhist population. This explains the absence of circular plan in the Tulu and the Kanarese speaking areas of the west coast. On the other hand, the apsidal ground-plan occurs sporadically all along the west coast right upto Trivandrum, with some concentration in the Trichur-Kozhikode area. Most of these temples have comparatively a longer width, thereby taking an almost semi-circular shape. That this type of ground-plan is quite old in Kerala is evident from the plan of the Vamana temple at Kizhavellur (fig. 9), District Kottayam, associated with an inscription of A.D. 1035, when Rajasimha *(circa* 102843) was on the Chera throne. Made entirely of laterite blocks, it encloses a *garbhagriha,* also apsidal on plan, with a row of pillars, in the inner ambulatory. Its *adhishthana* is of the *kapota-bandha* variety which became popular with the

early Chalukyas of Badami. A similar type of *adhishthana* has been observed in the *upapitha* of the apsidal temple at Tiruvanur (pl. LXVII), near Calicut, and there are reasons to believe that the *upapitha* there represented the earlier *adhishthana.* In the Siva temples at Trikkandiyur and Triprangod in District Malappuram, the latter yielding an inscription of Goda Ravi Varma, the earlier *adhishthanas* have been re-utilized as *upapithas* of the respective temples, each one having an apsidal ground-plan.

Most of the temples in Kerala, as already reported, are *sandhara prasadas,* with one or more circumambulatory paths around the *garbhagriha.* But they are of two different types: in the northern districts, the walls, generally of laterite, reach the ceiling of the ground-floor, following the older Chalukyan or the Pallava traditions, while in southern and central Kerala, the usual method is to transform the *garbhagriha,* which has its own flight of steps, into a miniature Dravida shrine, often complete from the *adhishthana* to the *stupi.* They invariably have an octagonal *sikhara* rising on square or circular ground-plan. To have square *garbhagriha* is the general rule in the southern districts but in central Kerala circular *garbhagriha* is quite common, and in some instances, it is circular externally and square internally. That this feature started quite early in the history of temple-architecture is evident from the extant plan of the temple at Tirunillai, District Palghat, ascribable to the eleventh century A.D. The octagonal *sikhara,* generally of stone, that has been built over the *garbhagriha,* is somewhat pyramidal in outline and shows trabeate construction. But in the *garbhagrihas* of the Parasuramesvara temple at Tiruvallam, near Trivandrum, and the Nandisvara temple at Tirunandikara, District Kanniyakumari, the *sikharas* have the appearance of a tall conical dome and are generally made of brick. In the early phase, only one ambulatory was provided around the sanctum, the back part of which sometimes houses the image of the god's consort. Undoubtedly, double circumambulatory (fig. 10) is a later feature which is commonly met with in the Districts of Ernakulam, Kottayam and Alleppey. This is the area where the walls of most of the temples are made entirely of wood and carved nicely (pl. LXVIII) with themes from the epics and the *Puranas.* In many respects, the themes depicted in the wood-carvings, which do not reveal any sectarian bias, are similar to those adopted in the paintings on the wall-surfaces. However, it is difficult to ascribe any wood-carvings or paintings to the early phase. Nor is it easy, without further critical analysis, to date any structures inclusive of the *bhitti* (pl. LXIX), rising above the *adhishthana* to the early phase despite the fact that some of them reveal several early features like the use of bevelled and *taranga* corbels, the occurrence of *devakoshthas* on the walls, the *hara* decorations over each *tala* in the form of *kutas, salas* and *panjaras,* the *haras* sometimes extending to the wooden terrace above the *mahamandapa,* invariably with a *suka-nasika.*

A brief survey of the caves on the Pearl Fishery Coast was also conducted in the area between the Tiruchchendur and the Manappadu headlands. These caves overlooking the Gulf of Mannar, have been excavated quite irregularly, in the hardened sandstone cliff. The one at Manappadu, now converted into a church, is a new addition to the list of caves in the Pandya country: Saint Francis Xavier is said to have lived in this cave in A.D. 1542-52. The cave facing east is a modest excavation with its opening towards the sea. Excavated to a depth of 9.75 m. it is, in the main, a pillared hall, measuring 5 m. X 5.3 m., having a constricted vestibule (1.7 m. X 2.6 m), fronted by a porch, all aligned axially. It has a circular well at the north-east corner of the hall. On the whole, the cave appears to be a simple excavation without any shrine-cell, and, in all probability, intended to be used as a residential cave unlike those excavated in the

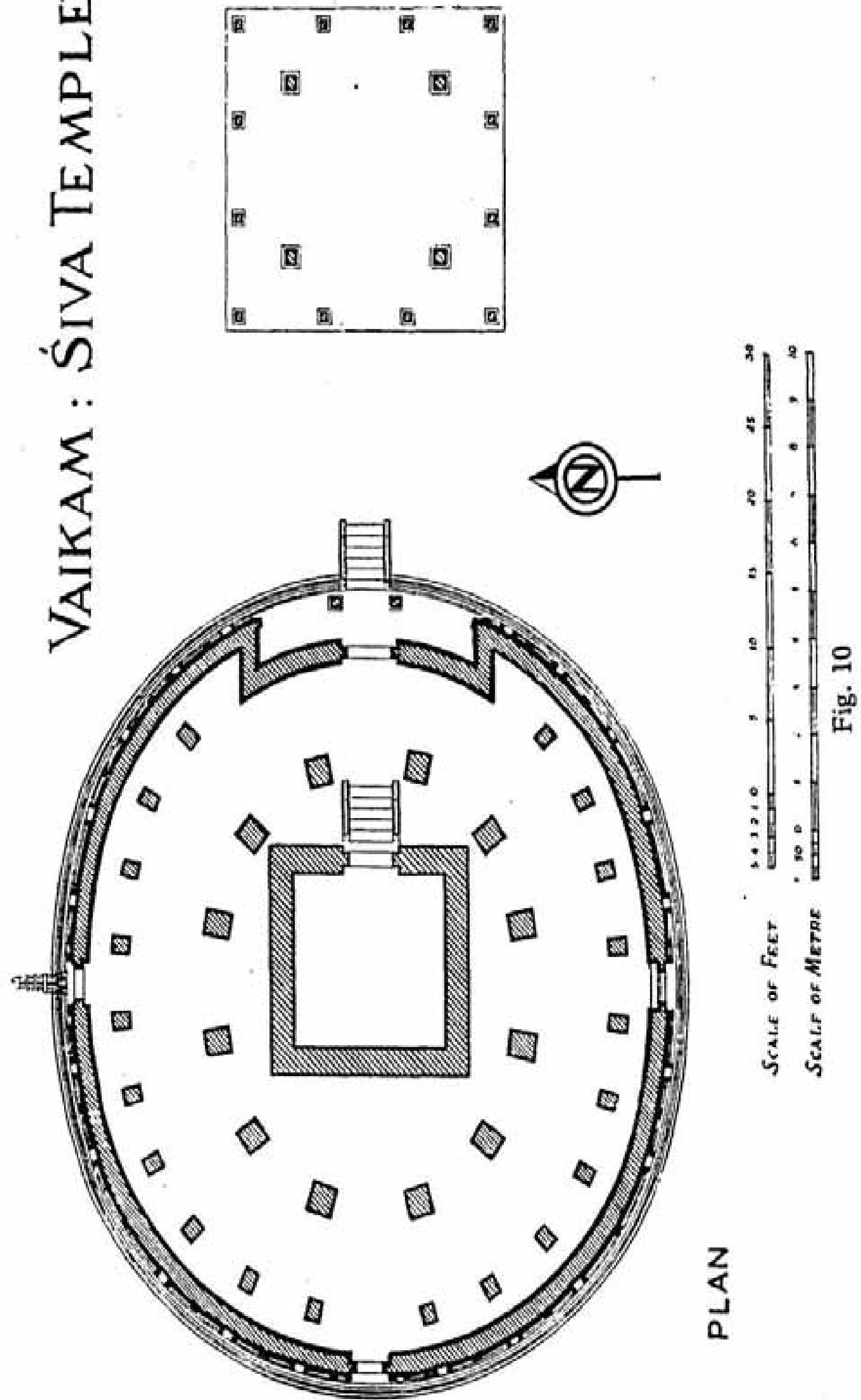


Fig. 10

granite rock farther inland. The Valli's cave at Tiruchchendur, comprising a partially-excavated hall and an inner cell, to be approached through an 'L'-shaped passage, was also not intended originally to be used as a cave-shrine. There are ruins of a number of excavations near the Valli's cave at Tiruchchendur. On circumstantial evidence, these rock-excavations, perhaps used as cave-resorts of the mendicants, may be dated to about the middle of the ninth century A.D.

VIII. **PRESERVATION OF MONUMENTS**

MONUMENTS OF NATIONAL IMPORTANCE

CENTRAL CIRCLE

Madhya Pradesh

1. FORT, ATER, DISTRICT BHIND.—The walls and palaces within the fort were cleared of vegetation.

2. BUDDHIST CAVES, BAGH, DISTRICT DHAR.—Expanded-metal shutters were fixed to the entrances and windows of the caves. The unnumbered cave to the north of Cave 2, was cleared of debris.

3. RUPAMATI PAVILION, MANDU, DISTRICT DHAR.—The floors of the first and second storeys were relaid with fresh lime-concrete, after removing the decayed concrete.

4. TAVELI MAHAL, MANDU, DISTRICT DHAR.—The decayed concrete of the ground floor was replaced by lime-concrete.

5. FORT, ASIRGARH, DISTRICT EAST NIMAR.—The undermined and bulged-out masonry of the bastions adjoining the Asirgarh gate was made good by underpinning and resetting of stones in their original position. The wooden beams of the Kamargarh gate were replaced and the roof relaid.

6. MANSINGH'S PALACE, FORT, GWALIOR.—A portion of the worn-out roof was made good by laying fresh concrete.

7. ROCK-CUT JAINA COLOSSI, GWALIOR.—A breast-wall was provided at the toe of the slope to check the denudation of the earthen embankment.

8. KUSHAK MAHAL, CHANDERI, DISTRICT GUNA.—In continuation of previous year's work (*1968-69,* p. 90), a portion of the bulged-out facade of the palace was made good by the resetting of stones.

9. TEMPLE OF GAURISHANKAR AND CHAUSATH-YOGINI, BHERAGHAT, DISTRICT JABALPUR.—The enclosed area was paved with stone slabs and a pipe-railing provided to curb the direct approach to the images by the visitors. The open joints of the steps leading to the temple was also filled in.

10. BRAHMANICAL ROCK-CUT TEMPLE, DHAMNAR, DISTRICT MANDASOR.—Random-rubble wall was erected on the top of the rock-cut temple to prevent accidents,

11. GADHI, PADHAVALI, DISTRICT MORENA.—The open platform around the temple was paved with stone slabs.

12. MALADEVI TEMPLE, GYARASPUR, DISTRICT VIDISHA.—Debris of the dislodged retaining wall was removed in order to take up the work of the restoration of the wall.

EASTERN CIRCLE

Assam

13. SIBDOL, SIBSAGAR.—The work of replacing the stone veneer of the *garbha-griha* is complete. The erection of a fence around the group of temples is in progress.

14. SIBDOL, GAURISAGAR, DISTRICT SIBSAGAR.—The temple was cleared of deep-rooted trees and the resultant damage made good. The moulded brickwork in the spire, wherever missing, was reproduced and a fresh lime-concrete was laid over the spire.

15. SIVA TEMPLE, NEGHERETING, DISTRICT SIBSAGAR.—Weeds and plants from the main and subsidiary temples were eradicated and the damages caused by the uprooting of trees made good. Cracks were repaired. Four subsidiary shrines were provided with new doors.

Manipur

16. VISHNU TEMPLE, BISHENPUR.—The temple was thoroughly repaired by uprooting trees, grouting of cracks, pointing and underpinning of walls and renewing of floor with lime-concrete. The surrounding area was levelled and dressed up, while a lime-concreted path was provided around the temple.

Nagaland

17. DIMAPUR RUINS.—The ruins received attention by way of eradication of trees and weeds, filling up of open joints and grouting of cracks. A fresh lime-concrete was laid on the top of the gateway.

Orissa

18. DAKSHAPRAJAPATI TEMPLE, BANPUR, DISTRICT PURI.—The top of the spire of the temple was made watertight by pointing. Vegetation and trees on the temple were removed and the roots treated with tree-killer. Tell-tales were fixed over a long vertical crack to observe any further movement.

19. GROUP OF TEMPLES, BHUBANESWAR, DISTRICT PURI.—The roofs of the *jaga-mohanas* of the Lingaraja temple, Ananta-Vasudeva and Muktesvara temples have been taken up for grouting and pointing in order to make them watertight. Cultural notice-boards for the Meghesvara, Brahmesvara and Bhaskaresvara temples in three languages have been prepared and are being fixed.

20. CAVES AT UDAYAGIRI-KHANDAGIRI HILLS, JAGMARA, DISTRICT PURL—Steps in front of the Jagannath Gumpha were repaired in dry stone masonry.

21. SUN TEMPLE, KONARAK, DISTRICT PURL—The work of filling up the open joints of the stones of the *pidhas* of the *jagamohna* by cement grouting and pointing, which started last year (*1968-69,* p. 91), is in progress.

The exposed stepped masonry of the core of the *vimana* which used to be utilized as an approach to the first tier of the terraced roof of the *jagamohana* are being made flush to prevent entry to the roof of the *jagamohana.* Visitors are now being provided with the facility of seeing the top with the help of binoculars.

Tripura

22. CHATURDASH DEVATA TEMPLE, UDAIPUR.—The work of building the parapet to the original height, which was in progress last year (*1968-69,* p. 91), has been completed.

23. GUNAVATI GROUP OF TEMPLES, UDAIPUR.—The works executed this year included, replacing of worn-out and missing bricks, fixing of expanded-metal doors, uprooting of trees and mending of resultant damages and levelling and dressing of the compound.

West Bengal

24. SHER AFGHAN'S TOMB, BURDWAN—Extensive repairs, such as pointing, plaster ing, making the roof watertight and changing of worn-out tiles, were effected.

25. LALJI AND NAVA KAILAS TEMPLES, KALNA, DISTRICT BURDWAN.—The subsidiary shrines were attended to by way of renewing roof-terrace and plastering.

26. MOSQUE AND MINAR, PANDUA, DISTRICT HOOGHLY.—The core was water-tightened and walls underpinned, where necessary.

27. MOSQUE AND TOMBS, SAPTAGRAM, DISTRICT HOOGHLY.—A lime-concrete path way was provided around the mosque.

28. SHRINE AND MOSQUE KNOWN AS DURGAH OF ZAFAR KHAN GHAZI, TRIBENI, DIS TRICT HOOGHLY.—Lime-concrete pathway was provided around the tomb. A masonry platform was built to arrange the loose sculptured stones lying scattered in the compound.

29. GUMTI GATE, GOUR, DISTRICT MALDA.—The fallen pilasters on the back side are being restored. The work is in progress.

30. LUKACHURI GATEWAY, GOUR, DISTRICT MALDA.—The leaking roof was reter-raced. Exposed sides of the fallen vaulted roof of the side room were made watertight. The walls of the side rooms were underpinned and pointed.

31. ADINA MOSQUE, PANDUA, DISTRICT MALDA.—The land around the monument was enclosed by a barbed-wire fencing.

32. EXCAVATED REMAINS AT RAJBADIDANGA, DISTRICT MURSHIDABAD.—The exposed brickwork was thoroughly water-tightened.

33. EXCAVATED SITE, BANGARH, DISTRICT WEST DINAJPUR.—The exposed brickwork was repaired where necessary and the top made watertight.

FRONTIER CIRCLE

Jammu and Kashmir

34. MUGHAL ARCADE, VERINAG, DISTRICT ANANTNAG.—In continuation of, the previous year's work (*1968-69* p. 92), the vault over the entrance to the arcade was restored.

35. EXCAVATED REMAINS, HARWAN, DISTRICT SRINAGAR.—The masonry of the apsidal *chaitya-griha* was repaired by strengthening the core in cement mortar and fixing the pebbles after the original (pl. LXX A-B).

36. KALA-DERA TEMPLE, BABOR, DISTRICT UDHAMPUR.—A beginning has been made towards the large-scale repairs to this important but highly-dilapidated temple.

37. MEDIEVAL TEMPLE, KIRAMCHI, DISTRICT UDHAMPUR.—The decayed base of the temple was restored (pl. LXXI A-B).

MID-EASTERN CIRCLE

Bihar

38. EXCAVATED REMAINS, NALANDA, DISTRICT PATNA.—The floors of the cells and verandahs of Monastery 11 were relaid with lime-concrete and the loose bricks of its walls reset in lime mortar.

The decayed apron of lime-concrete around the north, west and south sides of Temple 2 was removed and a fresh one laid.

The damaged wall of the plinth of the eastern wing of Temple 12 was repaired.

The walls of the small temple in front of Monastery 4 and also the walls of Temple 13 were made watertight.

39. ANCIENT STUPA, RAJGIR, DISTRICT PATNA.—Dislodged rubble stones of the dry masonry of the plinth of the so-called Ajatasatru's *stupa* were reset in position.

Uttar Pradesh,

40. RAMABHAR STUPA, KASIA, DISTRICT DEORIA.—The *stupa* was cleared of vegeta tion and *muram* spread over pathways.

41. DHARARA MOSQUE, VARANASI.—Lime-concrete was laid on the roof around the base of the northern dome and a tie-rod fixed on the northern portion of the roof.

NORTHERN CIRCLE

Madhya Pradesh

42. LAKSHMANA TEMPLE, KHAJURAHO, DISTRICT CHHATARPUR.—The sunken steps leading to the *mandapa* and the bulged-out plinth of the platform, in the western side of this temple, were restored by strengthening the foundation with cement-concrete bedding.

Rajasthan

43. FORT, BHARATPUR.—The wall of the fort near the bridge was strengthened by underpinning. The wall was plastered and the vegetation eradicated.

Uttar Pradesh

44. CHAUBURJI, AGRA.—The fallen parts of the *burji* were restored and the upper portion of its masonry strengthened by fresh cement-concrete.

45. FORT, AGRA.—The decayed bricks in the flooring of the Diwani-i-am were replaced. The dead and decayed mortar in the wall was removed and replaced by fresh mortar. The missing semi-precious stones in the inlay-work in many parts of the fort were restored. The growth of vegetation on the walls, gates and roof was removed. The broken marble stones in the flooring of the Moti Mahal were replaced.

46. RAM BAGH, AGRA.—The decayed masonry of the compound wall was strengthened by cement-concrete.

47. TAJ MAHAL, AGRA.—The entire forecourt in front of the main approach to the Taj was concreted to keep the area clean and free from dust. The fallen patches of plaster on the soffit of the arch of the entrance gate were also repaired (pl. LXXII A-B).

48. GROUP OF MONUMENTS, FATEHPUR SIKRI, DISTRICT AGRA.—The weathered and decayed marble slabs of the entire dome of the tomb of Sheikh Salim Chishti (pl. LXXIII A-B) are being replaced by new marble slabs after filling in the hollows with concrete. The work is in progress.

49. AKBAR'S TOMB, SIKANDARA, DISTRICT AGRA.—Grills were fixed to the stairs of the first terrace. The doors and railings of the main mausoleum and the main gate were painted.

50. MARIAM'S TOMB, SIKANDARA AREA, DISTRICT AGRA.—The cracks in the corner *burjis* were closed by grouting and the decayed plaster of the *burjis* was renovated.

51. EXCAVATED SITE, BHITA, DISTRICT ALLAHABAD.—Water-tightening and repairs to the excavated walls were effected. Vegetation-growth in the area was removed.

52. EXCAVATED SITE, KAUSAMBI, DISTRICT ALLAHABAD.—Repairs and water-tightening of the excavated wall were carried out.

53. GARHWA FORT, SHANKARGARH, DISTRICT ALLAHABAD.—Repairs to the walls were done and vegetation cleared.

54. FORT, KALINJAR, DISTRICT BANDA—The flight of steps leading from the first gate to the second was restored and repaired. Vegetation and debris around the area were removed.

NORTH-WESTERN CIRCLE

Delhi

55. HAUZ KHAS, DELHI.—The paths inside the monument were dressed and spread over with red *bajri.* The missing portions of the railings of the balcony on the north were restored.

56. JAMI MASJID, DELHI.—In continuation of the last year's work *(1968-69,* p. 95), the exfoliated sections of stones of the soffits in the south-west verandah were properly dressed. Iron dowels were replaced with copper ones, joints of the soffits and walls were recess-pointed and decayed stones replaced with new ones. Similarly, the north-west verandah was repaired with recess-pointing and grouting. The ornamental base of a white marble pillar in the water-tank was fixed with the help of special mortar and copper rods after removing the old and damaged base. On the south-west of the base ment wall, old and decayed stones were replaced with new ones.

57. RAZIA SULTANA'S GRAVE, DELHI.—Minor repairs were effected to the grave and its compound wall.

58. RED FORT, DELHI.—Vegetation-growth over the pathways and drives was removed and red *bajri* spread over them.

59. ADHAM KHAN'S TOMB, MEHRAULI.—The decayed lime-concrete of the floor of the tomb-chamber was removed and fresh floor laid in matching material.

60. JAHAZ MAHAL, MEHRAULI.—The dead lime-concrete from the floor of the courtyard was removed and replaced with fresh concrete. Loose joints of the masonry were pointed and walls underpinned. The moat was cleaned and debris removed.

61. LAL KOT, MEHRAULI.—Thick vegetation-growth was removed from the walls and the excavated trenches inside the Lal Kot.

62. QUTB MINAR, MEHRAULI.—The archaeological area of the Qutb Minar was fenced. Work on the construction of a car-park and cycle-stand outside the Qutb area is in progress. The pathways and drives within the Qutb area were spread over with red *bajri.* The pyramidal structure of Gadhgaj, which was in an extremely dilapidated condition, was largely repaired.

63. ARAB-KI-SARAI, NEW DELHI.—In the Mandi area of the Sarai, the breaches in the southern wall were closed and the out-of-plumb masonry repaired.

64. BU-HALIMA'S GARDEN AND TOMB, NEW DELHI.—The floors of the gateway were concreted, its walls plastered, joints of the masonry pointed and the falling plaster secured to the walls.

65. HUMAYUN'S TOMB, NEW DELHI.—The debris and thick vegetation from the interior of the enclosure-wall was removed and its damaged portion repaired with rubble-stone masonry in cement mortar. The drives and pathways were cleared of vegetation and spread over with red *bajri.* The water-tanks and channels were desilted.

66. JANTAR-MANTAR, NEW DELHI.—In continuation of the last year's work (*1968-69,* p. 95), the stone edging of pathways was repaired and broken stones replaced.

67. KHAIRU'L-MANAZIL MOSQUE, NEW DELHI.—The structures and the area around the Sher Shah's gate and Khairu'l-Manazil mosque were cleared of vegetation growth and accumulated debris.

68. KHAN-I-KHANAN'S TOMB, NEW DELHI.—The pathways were cleared of grass and spread over with red *bajri.* An apron of lime-concrete was provided around the plinth-platform to safeguard the foundations against seepage of water.

69. KOTLA FEROZ SHAH, NEW DELHI.—The fallen portion of the high fortification-wall to the south of the main gate was rebuilt and the open joints of the masonry pointed. Work on the flooring of the mosque is in progress. Drives and pathways were dressed, consolidated and spread over with red *bajri.*

70. NILI MASJID, NEW DELHI.—The debris that had accumulated here during the past years was largely removed. Dead concrete of the flooring was removed and fresh concrete was laid.

71. PURANA QILA, NEW DELHI.—In continuation of the previous year's work (*1968-69,* p. 95), the general appearance of the monument was improved by laying soling-ballast and red *bajri* over the pathways. The bituminous road was widened with berms (1 m. wide) on either side by laying soling-ballast topped with *bajri.* The following monuments inside the Purana Qila received special attention.

(i) Repairs and reconditioning of the cells on the south-western corner of the Qila were taken in hand (pl. LXXIV A-B). The roof of the cells was strengthened by grouting and filling cracks, rebuilding damaged and fallen arches and reconstructing stone facing.

(ii) The terrace and floor of Sher Shah's mosque were relaid in lime-cement concrete after removing the decayed ones. Modern brickwork was dismantled and the original compound wall repaired.

(iii) Apart from providing an approach-pathway from the road, a concrete apron was provided around Sher Mandal, the decayed flooring of which was dismantled and relaid with fresh concrete. Random-rubble masonry was raised to provide a support to the parapet.

(iv) The frontage of Humayun gateway was improved by the removal of accumulated debris and vegetation and by dressing up the area.

72. SAFDARJANG'S TOMB, NEW DELHI.—The pathways in the extensive garden attached to the tomb were cleared of vegetation, dressed and spread over with red *bajri.* The cells on the western basement-floor of the tomb were provided with doors and their walls were re-plastered.

73. SHIKARGAH KUSHK, NEW DELHI.—Vegetation-growth over and around the monument was cleared. Structural repairs here consisted of raking and pointing of wide joints of rubble masonry and concreting of the flooring of vaulted chambers and the roof-terrace after the removal of the dead concrete. The surrounding area of the monument was dressed and levelled.

74. GHIYATHU'D-DIN TUGHLUQ'S TOMB,TUGHLAQABAD.—In continuation of the last year's work (*1968-69,* p. 95), vegetation-growth was removed from the high sloping walls of the tomb and red *bajri* spread on the main pathways.

Haryana

75. IBRAHIM LODI'S GRAVE, PANIPAT, DISTRICT KARNAL.—The area around the monument was enclosed by boundary walls and barbed-wire fencing to prevent its misuse.

76. KHAWAJA KHIZIR'S TOMB, SONEPAT, DISTRICT KARNAL.—In continuation of the previous year's work (*1968-69,* p. 95), the outer plinth-wall was pointed with lime-cement mortar and the brickwork underpinned. The cracks on the plinth and parapet walls were filled in and plastered. The broken plaster of the floor inside the tomb was repaired and the joints at the entrance-gate were pointed. The area outside the tomb was dressed and levelled to drain off water.

77. SHEIKH CHILLI'S TOMB, THANESAR, DISTRICT KARNAL.—A wide rain-gully that had exposed the foundations of the enclosure wall on the south-west corner, was filled and topped with brick-floor to facilitate flow of rain water. The area in front of the monument was dressed, so that it may be provided with a lawn.

Himachal Pradesh

78. FORT, KANGRA.—A portion of the fallen fortification-wall on the western side above the Patalganga was rebuilt in rubble-stone masonry. Steps leading from the Ranjit Singh gate to the Jahangiri gate were repaired. The following monuments inside the fort received special attention.

(i) Bulged-out portions of the masonry-tank of the Hamam were dismantled and rebuilt and the wide joints on the sides of the tank were raked out and pointed. The water-channel leading from the tank was repaired. The old flooring of the tank was relaid with fresh lime-cement concrete and the side parapet wall restored. The choked and damaged water outlets were repaired by providing G. I. pipes concealed in the masonry. The surrounding area was cleared of vegetation and dressed.

(ii) Vegetation-growth around the palace area was cleared and a parapet-wall in coursed rubble-masonry was provided along the edge of the open terrace.

(iii) Vegetation-growth around the temple area was cleared to expose the structures which had been uncovered some years back by excavation. Heaps of stones lying here were removed and stacked properly for reuse.

79. FORT, NURPUR, DISTRICT KANGRA.—In continuation of the last year's work (*1968-69,* p. 95), the roof of the cells was relaid with fresh concrete and doors provided to the openings.

Punjab

80. FORT, BHATINDA.—In continuation of the last year's work (*1968-69,* p. 95), the ramp leading to the north-western terrace was provided with brick-flooring in cement mortar. The fallen portions of the fortification-wall as well as the parapet on the southern, western and northern sides were rebuilt after dismantling the portions which were out-of-plumb. The accumulated debris against the walls on the sides of the main gate was removed and the area levelled and dressed to drain off water. Patch repairs in Lakhauri bricks, grouting of cracks and hollows and pointing were also executed. The dislodged woodwork of the ceiling of a chamber in the palace was properly secured and the roof of the palace watertightened by tar-felting. Repairs to the brickwork arch of the gate were also executed.

Rajasthan

81. NILAKANTHA TEMPLE, GARH, DISTRICT ALWAR.—The work of clearance and removal of debris from the area surrounding the temple was completed and the site neatly dressed (pl. LXXV A-B).

82. EXCAVATED SITE, KALIBANGAN, DISTRICT GANGANAGAR.—Temporary provision of alkathene covering and construction of drains and bunds over the northern fortification-wall and cemetery, exposed by the excavations were effected. Work on providing a permanent shed over them is in progress. Similarly, the work of erecting a shelter over a portion of the mud-brick fortification-wall on the western side has also been taken in hand. Other important mud-brick structures were also provided with alkathene covering to protect them from rains and other damages.

83. PUNDARIK-JI-KI HAVELI, JAIPUR.—Outside the hall containing the paintings, an electric connection has been provided, so that the visitors can view the paintings with the aid of a flood-light when necessary. Structural repairs were carried out to other portions of the building.

84. BAOLI AND HARSAT MATA TEMPLE, ABANERI, DISTRICT JAIPUR.—In continuation of the last year's work (*1968-69,* p. 96), the repairs to the verandahs of the Baoli were continued. Works of plastering, renewal of flooring and clearance of debris are in progress. The loose joints in the Baoli were pointed.

Uttar Pradesh

85. EXCAVATED SITE, JAGATGRAM, DISTRICT DEHRA DUN.—At Site no. 1, repairs consisted of eradication of thick growth of *kusa* grass and relaying of fresh lime-cement mortar to keep the excavated bricks in position.

86. R. C. CEMETERY, SARDHANA, DISTRICT MEERUT.—Breaches in the compound

wall were closed and bricks affected by salt action were replaced with new ones of the same size. The top of the walls was rendered watertight.

SOUTH-EASTERN CIRCLE

Andhra Pradesh

87. GOND RAJAHS' TOMBS, CHANDA.—Repairs comprising filling in wide cracks with cement concrete, pointing of open joints of fort-walls and plastering to tombs were carried out.

88. FORT, WAIRAGARH, DISTRICT CHANDA.—Heavy jungle-growth over the fort-walls on three sides was cleared.

89. FORT, SIDHOUT, DISTRICT CUDDAPAH.—The fort area was cleared of heavy jungle-growth.

90. CHARMINAR, HYDERABAD.—The work of providing ornamental fencing around the ground floor of Charminar has been taken up. The work is in progress.

91. FORT, GOLKONDA, DISTRICT HYDERABAD.—The fort is undergoing large-scale clearance work. The operations revealed new structures, fountains and staircases. The modern accretions, added during the occupation of the Razakars, were also cleared.

Clearance of vegetation and debris from Rani Mahal brought to light the original flooring. Preliminary conservation was done by way of laying the dislodged stones of the walls in position and by reconstructing portion of missing walls and steps.

During the clearance work, many interesting aspects, such as the layout of earthenware pipe-lines interconnecting all the rooms and equipments of attached bath-rooms to almost all important royal apartments, were discovered (pl. LXXVI A-B).

Thick vegetation-growth and debris were removed carefully from the structures and basements of living apartments adjoining the Khilawat (pl. LXXVII A-B), without endangering the moulded plaster-work. The work is in progress.

92. ABDUL WAHAB KHAN'S TOMB, KURNOOL.—The existing low compound wall was raised up to the eye level.

93. UMA-MAHESVARA TEMPLE, YAGANTI, DISTRICT KURNOOL.—A portion of the cut-stone northern enclosure wall, which had fallen, has been restored with the old stones lying at the site. The work is in progress.

94. TORANA GATEWAYS, FORT, WARANGAL.—The shroud of debris including fallen sculptured stones and fragments of pillars, capitals and beams were cleared in order to expose the original plan of the temple. The work is in progress.

SOUTHERN CIRCLE

Mysore

95. OLD DUNGEON, FORT AND GATES, BANGALORE.—The semi-circular bastion on the south-western corner was restored with the original stones.

96. TIPU SULTAN'S BIRTH-PLACE, DEVANAHALLI, DISTRICT BANGALORE.—The cracks in the compound wall of the monument were grouted and bond-stones inserted. The whole structure was colour-washed. An iron gate was erected at the entrance and a stone pavement provided. ;

97. MONOLITHIC BULL IN A MANDAPA, HAMPI, DISTRICT BELLARY.—The out-of-plumb masonry was set right, jungle and debris cleared to expose Nandi to the full view and joints strengthened in the *mandapa* (pl. LXXVIII A-B).

98. NARAYANASVAMI TEMPLE, MELKOTE, DISTRICT MANDYA.—An open drain was proyided in the southern side along the.basement. The Amman shrine and *Vahana-mandapa* were provided with wooden doors as per old design. The ancient woodwork was painted.

99. DARYA DAULAT BAGH, SRIRANGAPATNA, DISTRICT MANDYA.—The damaged pillar-bases were replaced with fresh ones. The decayed part of the wooden pillars was restored with teakwood pillars carved with designs as per original and painted with green, paint.

100. KESAVA TEMPLE, SOMANATHAPUR, DISTRICT MYSORE.—The main temple was made watertight by laying a fresh terrace in combination-mortar.

101. CHENNAKESAVA TEMPLE, NAGALAPURA, DISTRICT TUMKUR.—A stone masonry ring was provided to support the entire foundation which evinced signs of settlement. The heavy accretionary dry-stone masonry,added previously on the top as well on the sides, was dismantled and removed to expose the original fabric of the structure for further-conservation.

Tamil Nadu

102. PIRAVATHANESVARA TEMPLE, KANCHIPURAM, DISTRICT CHINGLEPUT.—A masonry accretionary wall on the northern face of the *ardhamandapa* (interior) was removed, which exposed a beautiful Bhikshatana panel.

103. CLIVE'S BUILDING, FORT ST. GEORGE, MADRAS.—The wooden staircase was repaired and the terrace of a room in the north-east corner was made watertight. A cultural notice-board was provided in English and Tamil.

104. CHANDRAMAULISVARA TEMPLE, NATTERY, DISTRICT NORTH ARCOT.—Earth was removed from all around the temple-walls to expose the inscriptions.

105. JAINA TEMPLE, THIRUMALAI, DISTRICT NQRTH ARCOT.—Expanded-metal open ings were provided in the wall of the painting-room to admit more light. The floor of the Parsvanathasvami shrine was repaired and patch plastering was executed to the Sukha-maninatha shrine.

106. FORT, VELLORE, DISTRICT NORTH ARCOT.—The fallen portion of the upper rampart wall on the west of the P.R.S, building was reconstructed. The walls of the upper rampart on the western side of the Ethiraj pavilion, the back side of the P.R.S;

building and the eastern side of the upper rampart were -plastered after attending to the underpinning work.

107. GYMNASIUM, GINGEE, DISTRICT SOUTH ARCOT.—The vaulted leaky roof-terrace was repaired by re-laying flat tiles and grouting the cracks.

108. VENKATARAMANA TEMPLE, GINGEE, DISTRICT SOUTH ARCOT.—The debris inside the sanctum was removed and the main door was varnished. The cracks; of the main *gopuram* were grouted, while vegetation was removed from the eastern *gopuram.* Arrangements have been made for proper drainage of water.

109. BRIHADISVARA TEMPLE, THANJAVUR.—The cracked ceiling-slabs of the northern cloister were replaced with new granite slabs and the terrace -watertightened by laying fresh concrete, finished with flat tiles. The accumulated earth and the retaining-wall on the southern side of the main courtyard were removed, which revealed the original shape of the plinth of the cloister.

Dressed stone-slabs over beds of laterite and concrete were provided at the approach-road from the Rajaraja-gopuram to the Keralanthakan-gopuram.

Parapet-walls were raised and dry-stone revetments provided on the two sides of the approach road to the temple across the moat. The raised platform on either side of the steps leading to the *mukha-mandapa* was dismantled, exposing the original steps with-inscriptions. The original features of the Mahalakshmi shrine near the southern entrance to the *ardha-mandapa* were exposed after removing the brick accretions (pl. LXXIX A-B).

The original stone drain coeval with the temple, near Madapalli, was brought to light after removing accumulation of earth.

Pipe-railing was provided, in place of accretionary brick walls, between the pillars of the *mukha-mandapa* in the Subrahmanya temple and in the first floor of the main temple.

The decayed-plaster over the brick arch of the Maratha period was replaced by fresh plaster. Jungle-growth and accretions on either, side of the arch were cleared. The, existing gate on the southern side was shifted further inside, to .provide for a car-park.

A cultural notice-board in Tamil and English was fixed at the Rajaraja-gopuram. A water-cooler was also provided for the visitors.. Barbed-wire fencing was provided around Nandavanam on the. south side between the two *gopurams.* The well inside the area was improved.

110. SIVA-GANGA LITTLE FORT, THANJAVUR.---Construction of a dry revetment on the moat-side and underpinning of the brick walls of the northern periphery of the fort were carried out, Removal of earth from the north side of Keralanthakan-gopuram revealed a portion of the original mud rampart.

111. AIRAVATESVARA TEMPLE, DARASURAM, DISTRICT' .THANJAVUR.—The out-of-plumb ashlar veneer of the *prakara*-wall in the north-west corner of the temple was rebuilt from the top to the base with the same stones. The core was filled in with concrete in lime-mortar.

The buried basement of the Nandi-*mandapa* and *Bali-pitha* was exposed by excavation which revealed the original details.

A portion of the uneven flooring in the courtyard was reset and the joints pointed with cement mortar.

The removal of the accretions led to the discovery of a unique structure with wheels and horses on the plinth of the *mukha-mandapa.*

The accretionary brick structure in front of the Dakshinamurti shrine was also removed, exposing the original features in stone masonry.

112. SIVA TEMPLE AT NEDUNGADU, KARAIKKAL, DISTRICT THANJAVUR.—The buried depression around the plinth of the shrine was exposed by excavation and the dwarf brick wall raised for the proper drainage of water. The modern tiled roof in front of the Subrahmanya shrine was removed in order to restore the full view of the shrine.

113. EXCAVATED SITE, KAVERIPATTINAM, DISTRICT THANJAVUR.—The excavated site of the inlet sluice-head at Vanagiri was re-exposed by removing the filling material and the area provided with a barbed-wire fencing after strengthening the excavated remains.

114. BRIHADISVARA TEMPLE, GANGAIKONDACHOLAPURAM, DISTRICT TIRUCHCHIRAPPALLI.—The north-east wing (30 m. X 7 m.) of the roof-terrace was made watertight by removing two layers of bricks and laying two courses of flat tiles in cement mortar.

The skylight openings of the *mandqpa* were widened at the top, in a wedge shape, to admit more light.

SOUTH-WESTERN CIRCLE

Goa

115. SHANTA DURGA TEMPLE, MARCELLA.—Besides providing a tiled roof in the verandah to prevent splashing of rain-water in the *sabha-mandapa,* the surroundings of the temple were cleared of vegetation and the damaged compound wall of laterite blocks repaired.

116. MHALSADEVI TEMPLE, MARDOL.—The cracks in the Deepamala (Tower of Lamps) were filled in and the surface treated with snowcem.

117. CATHEDRAL OF THE HOLY SEE, OLD GOA.—The repairs to the tiled roof were carried out to render the monument watertight.

118. CHAPEL OF ST. CAJETAN, OLD GOA.—The tiled roof, which was heavily damaged during the cyclone of 1969, was repaired by providing missing tiles.

119. CHURCH OF BOM JESUS (ST. XAVIER), OLD GOA.—The jungle-growth and debris in the backyard of the monument were removed. The ground was levelled and drains provided to drain off rain-water which used to accumulate in pools and get into the foundation.

120. CHURCH OF ST. FRANCIS OF ASSISI, OLD GOA.—The leaky roof was made good by providing missing tiles. The vast amount of debris accumulated in the gallery of the first floor was removed. As it was found necessary to carry out extensive repairs to the win dows through which rain water splashed on the paintings inside the hall, steps have been initiated to replace the decayed wooden members of the window-frames and to provide glass panels. Canvas screens are being fixed to prevent splashing of rain water through the window-openings.

121. SIVA TEMPLE, TAMBDE SURLE.—The vegetation was removed and the sunken stone-pavement relaid in its original level. The dislodged stones of the parapet of the pillared *sabha-mandapa* were reset in their original position and the roof was rendered watertight (pl. LXXX A-B). To prevent seepage of water into the foundation, concrete was laid all round the basement of the temple.

Maharashtra

122. MALLIKARJUNA TEMPLE, GHOTAN, DISTRICT AHMEDNAGAR.—This temple, which had suffered heavy damage in the past owing to the subsidence of the foundation and collapse of certain portions of the wall, was taken up for repairs. In order to prevent seepage of water into the foundation the original stone pavement and floor in the court yard are being cleared by removing debris and flagstones will be provided all round to drain off water.

123. BIBI-KA-MAQBARA, AURANGABAD.—The approach-road to the east wing of the tomb of Rabia Durrani was improved by mending the damages caused during the monsoon and surfacing it with *kankar.* Electric light was provided in the main entrance-gate and outside to help visitors to move about in the garden at night.

124. ROCK-CUT CAVES, AURANGABAD.—In Cave 9, masonry pillars were replaced by those of R.C.C. matching the original rock-cut pillars and concrete was laid to remove the unevenness of the floor.

125. ROCK-CUT CAVES, AJANTA, DISTRICT AURANGABAD.—Seepage of water and accumulation of dust over the paintings were the two major problems tackled this year. By cutting a channel (.90 m. wide and .45 m. deep) in the rock at the level of the lower terrace above Caves 1 to 4, the main flow of rain-water from the hill-top was diverted and seepage through the cracks in the rock considerably reduced. The work of removing the top layer of the weathered rock above Caves 16 and 17 and gunniting the surface, after grouting the cracks, is in progress. The storm-water drain in the intermediate terrace was concreted after removing the stone pavement.

In order to reduce the quantum of dust accumulating on the paintings and sculptures, the entire courtyard in front of Caves 10 to 26 was concreted.

Other items of repairs carried out consisted of replacement of masonry pillars in Cave 6 by those of R.C.C. matching the rock-cut pillars in colour and texture, fixing the cracked and sagging bracket-figures in Cave 16, careful mending of the damaged sculptures in the *Mahaparinirvana* scene in Cave 26 and underpinning of the rock-cut platforms and walls in the verandah of the same cave.

Electrification of Cave 1 has been completed and it is now possible to see the paintings on the four walls without going through the cumbersome process of hand-lights. Tube-lights have been fixed in Caves 19 and 26 on an experimental basis.

The pot-holes in the original floor of Cave 10 were filled and the whole surface concreted to match with the original. The masonry steps in front of Cave 10 have been demolished and fresh ones built further away in order to expose to view a rock-cut cell containing a figure of Buddha which had hitherto lay hidden.

The muram-spread road leading to the garden at the foot of the caves, which had been damaged during rains, was repaired by laying concrete.

126. FORT, DAULATABAD, DISTRICT AURANGABAD.—Heavy jungle-growth in the fort and on the outermost fortification-wall was removed. One of the Hindu shrines near Gate 3 was attended to by way of provision of drains.

127. ROCK-CUT CAVES, ELLORA, DISTRICT AURANGABAD.—The masonry pillars in the first floor of the entrance-porch in Cave 16 were removed after introducing R.C.C. beam below the precariously-hanging rock-cut ceiling. The damaged panel of Agni in the facade of the wall flanking the porch was mended and the cracks filled in with suitable mortar.

A parapet wall was built in R.C.C. along the edge of the rock from Caves 3 to 5 to ensure the safety of the visitors.

The unsightly masonry wall which permitted seepage of water in Cave 32 was chiselled and plastered to match with the adjacent rock surface. The cracks in the rock-cut roof and fissures between the boulders are being plugged and grouted. Rock-cut steps were provided in Cave 21 after chiselling the undulating rock surface.

128. ROCK-CUT CAVES, KANHERI, DISTRICT BOMBAY SUBURBAN.—The open area at the foot of the caves was fenced and the frontage was provided with steel pipe-frames with mesh crimp, the earthen ramp leading to the caves which had been heavily eroded during the rains was laid with concrete. A flight of steps was provided after chiselling uneven rock in front of Cave 1.

The rock-cut cisterns in various caves, wherein drinkable water is stored, were provided with R.C.C. lids. Excavation in Cave 25 brought to light several new features and interesting finds.

129. ROCK-CUT CAVES, ELEPHANTA, DISTRICT KOLABA.—The damaged walls and door-jambs of Cave 4 were restored in R.C.C. to match with the adjacent rocky surface.

130. FORT, RAIGADH, DISTRICT KOLABA.—Vegetation growing on fort-walls and other structural remains was removed. The tops of the walls of the palace were watertightened and inspection-paths laid out. The spongy plaster of the *Samadhi* of Shivaji was removed and fresh plaster provided. Certain repairs to minor structures by way of pointing joints in the masonry to prevent seepage of water were also carried out.

131. FORT, PANHALA, DISTRICT KOLHAPUR.—The heavy growth of jungle over the fort-wall was removed and the roots were treated with tree-killer. The tops of the rubble masonry walls of Tin Darwaja, Pusati Burj and Ander Bav were rendered watertight and the open joints in the masonry pointed.

132. SHANWARWADA, PUNE.—The rotten wooden beams and planks in the ceiling of the southern and western wings were replaced by new ones and the cracks, developed due to earthquake, were filled in and fresh concrete laid.

Mysore

133. MADRASA MAHMUD GAWAN, BIDAR.—The unauthorised occupation of a portion of the Madrasa and its misuse by the occupants had resulted in damage to the glazed tiles on the walls. These damages have been mended and the garish oil-painting is being removed. The leaking dome was rendered watertight.

134. ROYAL HAMMAM IN FORT, BIDAR.—The Royal Hammam, which houses a large number of sculptures, received urgent repairs. The collapsed walls were rebuilt in coursed stone masonry and plastered wherever necessary. The old woodwork was given a preservative coat. Electrification of the museum-portion of the Hammam is in progress.

135. GOL GUMBAD, BIJAPUR.—The eastern wing of the compound wall, some portions of which had collapsed, was rebuilt in coursed rubble masonry. Stone pavement was provided in the museum-portion of the pavilion in front of the mausoleum.

136. EARLY CHALUKYAN TEMPLES, AIHOLE, DISTRICT BIJAPUR.—There are as many as 102 temples of various dimensions at Aihole and many of them have suffered damage due to vandalism and encroachment during the last two hundred years. Last year, the modern houses, encroaching on the area of some of the temples, were acquired and demolished.

This year, systematic clearance of debris and excavation were undertaken in the enclosure of the Lad Khan, Nadiger, Narayana and Gaudar Gudi temples with a view to exposing the buried plinths and tracing the original pavement, steps, etc. In the course of the excavation, the moulded plinth of a stone temple, built earlier than the Gaudar and Lad Khan temples and perhaps pre-Chalukayan in age, came to light. Remains of a brick temple, underlying the foundations of the Lad Khan temple but different in orientation, were encountered. The occurrence of Red Polished Ware in the layer sealing the brick structure suggests that it was built before the fifth century A.D. and may even be of the Satavahana period as indicated by other ceramic wares from contemporary layers. As a result of the excavation, the moulded courses of the plinths of the Lad Khan, Gaudar Gudi and Suryanarayana temples and of the two miniature shrines standing near by are now fully exposed to view. The original flight of stone steps leading to and the ashlar masonry wall enclosing the Gaudar Gudi temple were also exposed.

The Kunti temple-complex, hitherto considered to be one of the earliest Chalukyan attempts at temple-building, received much attention by way of repairs and clearance of debris. The excavation, undertaken here after demolishing the acquired houses, brought to light the existence of a fourth temple with beautifully-sculptured pillars (pl. LXXXI A-B). The hitherto-buried courses of the plinths and steps of Temples 1, 2 and 3 were also laid here.

An inscribed stone slab, 2 m. high, recovered as a result of the excavation, was found to have been installed by a guild, known as "Aihole 500", simultaneously with the erection of a *torana* in the beginning of the eighth century A.D. It is interesting to find

that stone benches were constructed along the platforms of temples covering the weathered mouldings of the plinths, in the ninth and tenth centuries A.D., with a view to arresting further decay of the courses of the *adhisthana.*

An approach-road was laid out to enable the visitors to go from the Kunti temple to the Hucchappayya Math complex and thence to the Veniyar group.

In the course of excavation, undertaken with a view to levelling the ground and exposing the moulded plinths of the two temples in the Hucchappayya Math complex, gold and silver ornaments were found. Among them, a gold pendant with a beautiful figure of a peacock is of particular interest. On stratigraphic evidence, the jewellery can be assigned to the eighth century A.D.

The modern accretions near Chakra Gudi (Gaudar Gudi No. 2) are being removed to expose the plinth and pavement of the temple. The Badiger Gudi was also relieved of some of the modern accretions. Its surroundings are being rendered tidy.

Repairs to the Chikki Gudi and Rachi Gudi are in progress. The manure-pits in front of these temples were filled in.

The Durga temple was relieved of encroachments. The modern rubble masonry-wall was removed, as a result of which it is now possible to have a full view of the temple from all sides. Levelling of the ground for laying out a garden in the Ladkhan-Durga temple-complex is in progress.

137. BHUTANATHA TEMPLE (EAST), BADAMI, DISTRICT BIJAPUR.—In one of the temples of this group the *linga* was found displaced. It was reset in its original position and the *arghya-patta* also repaired. The plinth of the Lakulisa temple, hitherto buried under debris, was exposed and the area around dressed up. The sunken steps of the eastern Bhutanatha group were reset after underpinning.

138. ROCK-CUT CAVES, BADAMI, DISTRICT BIJAPUR.—The uncouth appearance of the frontage of the caves was substantially improved by levelling the ground after demolish ing modern accretions. Erosion of the slopes, which had become an annual feature due to the overflow of water from the lake, was stopped by providing stone pitching. The courtyard between Caves 1 and 4 is being electrified.

139. PALLAVA INSCRIPTION, BADAMI, DISTRICT BIJAPUR.—The surroundings of the famous Pallava rock-inscription were greatly improved by levelling and laying out an inspection-path. Erosion was arrested by erecting dry-rubble walls wherever necessary. As a result of the clearance operation, the basement of a hitherto unknown Chalukyan temple was laid bare.

140. CHALUKYAN AND RASHTRAKUTA TEMPLES, PATTADKAL, DISTRICT BITAPUR.—Of the three main groups here, the Virupaksha group of temples was taken up for repairs. As a result of the clearance operation, several new shrines and architectural features came to light. After removing the enormous quantity of debris that had accumulated over centuries to a height of 3 to 3.5 m., as many as thirty-six miniature shrines were brought to light. Friezes of animals, carved in bold relief, over the plinth of the Mallikarjuna temple and its *Nandi-mandapa,* were laid bare. Underground granaries, built in the courtyard of this temple are noteworthy. The Sangamesvara, Mallikarjuna, Kasi-Visvesvara, Kada-Siddhesvara and Galaganatha temples are now relieved of their modern accretions and the whole area has been levelled up and tidied for laying out a terraced

garden on the river-front. The enclosure wall of the Virupaksha temple with its beautiful mouldings has been exposed on the south side and the collapsed subsidiary shrine in the south-east corner of the courtyard has been partly rebuilt. A pillared brick temple of the Satavahana period has been laid bare in front of the Sangamesvara temple as a result of excavation (pl. LXXXII A-B). Repairs, by way of underpinning the plinth and grouting cracks, are being carried out in the case of the major shrines.

141. NAGESVARA TEMPLE, BANKAPURA, DISTRICT DHARWAR.—Flagstones are being provided in the courtyard to prevent seepage of water into the foundations of the temple.

142. MALLARAYANA KATTI AT GADAG, BETGERI, DISTRICT DHARWAR.—The collapsed rubble wall around a number of stone inscriptions was rebuilt to safeguard the inscrip tions from damage by stray animals.

143. MUKTESVARA TEMPLE, CHAUDADANAPURA, DISTRICT DHARWAR.—Last year, the stone parapet-wall along the river-bank was raised in height and further pitching of the slopes was done with a view to preventing erosion. The walls of the Sivadevasvami temple in the Muktesvara complex were rebuilt after carefully dismantling the bulged portions. The roof was rendered watertight by laying concrete after resetting the dislodged slabs.

144. TARAKESVARA TEMPLE, HANGAL, DISTRICT DHARWAR.—This temple, famous for its beautiful sculptures, lathe-turned pillars and carvings in the ceiling, is one of the. largest of its kind. The leaking roofs of the *antarala, sabha-mandapa* and *mukha-mandapa* were made watertight by laying fresh lime-cement concrete after reducing the dead load. Water-spouts were provided wherever necessary.

145. KASI-VISVESVARA TEMPLE, LAKKUNDI, DISTRICT DHARWAR.—The safety of the temple was endangered, due partly to erosion of the mound on which the temple stands and partly to quarrying for earth by the public. This year, a dwarf rubble masonry-wall was built to arrest erosion. The open land is being fenced.

146. TOMB OF CHAUKHANI HAZRAT KHALILULLA SHAH, ASHTUR, DISTRICT GULBARGA.—The heavily-leaking domes and terraced roof of the tomb were watertightened by removing dead mortar, laying fresh lime-cement concrete and plastering with water proof compound.

147. THE GREAT MOSQUE IN THE FORT, GULBARGA, DISTRICT GULBARGA.—Wooden frames with expanded-metal were provided in the arched openings of the walls to prevent the entry of bats.

148. MADHUKESVARA TEMPLE-COMPLEX, BANAVASI, DISTRICT NORTH KANARA.—During 1968-69, the leakage in the roof of the main temple was stopped by laying fresh concrete. This year, the moss and lichen growing on the *sikhara* were removed and the surface treated with a waterproof compound. The tiled gabled roof, put up in the past over the Parvati temple, was removed and the terrace was rendered watertight by re laying concreted mortar, plastered with waterproof compound. The same treatment was also given to the terrace of the Narasimha and Virabhadra temples. Among the large

number of miniature shrines standing along the edge of the courtyard of Madhukesvara temple, the shrines of Vayu, Indra, Suryanarayana and Venkataramana were taken up for repairs. After resetting the bulged walls and displaced roof-slabs, the top was rendered watertight by laying concrete.

Thick coats of lime, covering the carvings on the *sikhara* and walls of the Madhukesvara, Parvati, Virabhadra and Narasimha temples, were removed and a preservative coat was applied.

149. CHATURMUKHA BASTI, GERSAPPA, DISTRICT NORTH KANARA.—An approach-road was laid-out and drains were provided to divert rain-water. To stop nuisance by bats, expanded-metal shutters were provided in the door- and window-openings. A flight of stone steps was built and some of the missing stones of the interior pavement were made good.

150. MAHADEVA TEMPLE, ITTAGI, DISTRICT RAICHUR.—Encroachments in the subsidiary shrines were removed, some of the accretionary walls demolished and the debris cleared. Excavation has been undertaken to expose the buried plinths.

WESTERN CIRCLE

Gujarat

151. DWARAKADHISH TEMPLE, DWARKA, DISTRICT JAMNAGAR.—The uneven lintels, pillars and other architectural members were properly dressed and the damaged members replaced by the newly-carved ones. The work of random-rubble masonry between the walls of the *sabha-mandapa* was taken up. A modern wall on the north side of the *sabha-mandapa* was removed to facilitate circumambulation. The damaged and weathered pillars, capitals and a lintel in the eastern first floor balcony of the *garbha-griha* were replaced. The dressing of the uneven stones and replacement of the damaged ones in the southern gateway were completed.

152. PURSHOTTAMJI TEMPLE, DWARKA, DISTRICT JAMNAGAR.—The damaged *adhisthana* mouldings in the southern and western parts of the temple were replaced by newly-carved ones.

153. TRIVIKRAMJI TEMPLE, DWARKA, DISTRICT JAMNAGAR.—The damaged *adhisthana*-mouldings of the north face of the temple were removed and replaced by freshly-carved stones.

154. KHAPRAKODIA CAVES, JUNAGADH.—A compound wall was constructed on the back side of the monument to prevent unauthorised entry.

155. GALTESVARA MAHADEVA TEMPLE, SARNAL, DISTRICT KHEDA.—The raised plat form was provided with apron-slabs over a cement-concrete bed to prevent seepage of water into the foundation of the temple.

156. SAYYID MUBARAK MOSQUE, SOJALI, DISTRICT KHEDA.—Watertightening and clearance of debris were taken up.

157. SUN TEMPLE, MODHERA, DISTRICT MAHESANA.—The damaged lintels of the doors of the *garbha-griha* and *sabha-mandapa* and other decayed and broken architectural members were replaced. The unsightly iron beams of the *sabha-mandapa* were removed. An apron was provided around the temple and the entire protected area was fenced.

158. RANI-KI-VAV, PATAN, DISTRICT MAHESANA.—Loose sculptures and stones accumulated inside the well were lifted. The dilapidated side walls were set right and their sculptures fixed in position.

159. SHAHAR-KI-MASJID, CHAMPANER (PAVAGARH), DISTRICT PANCH MAHALS.—A barbed-wire fencing around the monument was erected to prevent encroachment. Garden ing operations have been started in front of the monument.

160. TAMBEKARWADA, VADODARA.—The terrace was repaired to prevent seepage of rainwater into the monument. Some portions of the decayed parapet-wall were removed to reduce the load.

161. HAZIRA, DANTESHWAR, DISTRICT VADODARA.—The work of providing apron-slabs over the cement-concrete bed in the missing portions of the platform was completed.

Rajasthan

162. FORT, CHITORGARH.—The uneven stone flooring near the Nagarkhana area in Rana Kumbha's palace was reset with stones over a bed of lime-cement concrete. A lime-cement concrete flooring was provided to one of the rooms in the western side of the palace to prevent seepage of rain-water to the ground floor.

The damaged and uneven stones of the pavement of the Badi Pol gateway were replaced with the new Manpura stones.

The decayed lime-concrete flooring in the rooms of the Mira Mahal was made good. A lightening-conductor was installed on the Kirtistambha.

163. GROUP OF TEMPLES, MENAL, DISTRICT CHITORGARH.—The uneven stone pave ment around the Mahanalesvara temple was replaced with a new one in lime-cement concrete. The dilapidated ashlar masonry of one of the subsidiary shrines was made good in lime-cement mortar as per original design.

164. FORT, KUMBHALGARH, DISTRICT UDAIPUR.—The dilapidated ashlar masonry and bulged *sikhara* together with missing portions of the eastern side of the Bavan Deori temple were taken up for restoration.

Clearance of debris, excavation of the area surrounding the Jaina group of temples near Bamanvav-Bavdi and resetting of the fallen loose sculptures of the *garbha-griha* were attended to. The dislodged ashlar masonry of the *garbha-griha* was made good and watertightening of the terrace and the dome was taken up. The eastern retaining-wall of the Topkhana was reconstructed in random-rubble masonry.

165. SAS BAHU TEMPLES, NAGDA, DISTRICT UDAIPUR.—The heavy load of the *sikhara* of the Sas temple on the broken lintels and jambs was relieved by providing steel joists over the cement-concrete bed-plates, concealed within the walls of *antarala.* The ceiling

of the dismantled portion of the *sikhara* was made watertight by providing stone slabs over R.S. beams resting on circular cement-concrete bed-plates hidden within the brick core of the *sikhara.* The reconstruction of the dismantled portion of the *sikhara* was completed by providing freshly-prepared bricks.

MONUMENTS MAINTAINED BY STATES

ASSAM

1. ARCHAEOLOGICAL RUINS, BAMAN GOAN, DISTRICT DARRANG.—The sculptures, hitherto lying buried, were cleared and arranged over masonry benches within a barbed-wire enclosure.

2. BASUDEVA .TEMPLE, KAMDEWAL, DISTRICT DARRANG.—The temple was eradicated of vegetation. A part of the temple was underpinned and grouted.

3. MANIKARNESVARA TEMPLE, NORTH GAUHATI, DISTRICT KAMRUP.—Large-scale repairs were carried out to this temple. Thus, vegetation-growth was removed, vertical cracks sealed, loose portion of the masonry reset and ruined archway reconstructed.

4. HARA-GAURI TEMPLE, UMANANDA, DISTRICT KAMRUP.—Vegetation from the temple was eradicated, the *jangha* repaired and the exterior plastered. The area around the temple was cleared and dressed up.

5. RAIDONGIA TEMPLE, KALAKHOWA, DISTRICT LAKHIMPUR.—In continuation of the previous year's work (*1968-69,* p. 103) the side and the central domes were fully repaired and the surrounding area was dressed up.

6. RANGANATHA TEMPLE, JOYSAGAR, DISTRICT SIBSAGAR.—Conservation works included clearance of vegetation, grouting of extrados, partial rebuilding of masonry and repairs to the side domes.

7. NAMTI VISHNU TEMPLE, NAMTI, DISTRICT SIBSAGAR.—Trees were eradicated and masonry rebuilt at places.

8. NA-PUKHURI TEMPLE, RUDRASAGAR, DISTRICT SIBSAGAR.—In continuation of the last year's work (*1968-69,* p. 103), uprooting of vegetation, underpinning work, reinforce ment of the intrados of the *antarala* and the reconstruction of the turrets were carried out.

GUJARAT

The following monuments received conservation measures: —

9. BHUJIYO KOTHO, JAMNAGAR, DISTRICT JAMNAGAR.

10. NAVALAKHA TEMPLE, GHUMALI, DISTRICT JAMNAGAR.

11. GADH, MODPUR, DISTRICT JAMNAGAR.

12. JAMI'-MASJID, JUNAGADH.

13. UPARKOT-KOTHAR, JUNAGADH.

14. PUNARESVARA, LAKHADI, DISTRICT KUTCH.

15. SHAKTI-KUND, AKHAJ, DISTRICT MAHESANA.

16. SASU-NI-VAV, LAVANA, DISTRICT PANCH MAHALS.

17. VAHU-NI-VAV, LAVANA, DISTRICT PANCH MAHALS.

18. TEMPLE WITH INSCRIPTION, LAVANA, DISTRICT PANCH MAHALS.

19. SLKARMADHI, LAVANA, DISTRICT PANCH MAHALS.

20. TEMPLE WITH DOME AND STRAY SCULPTURES, LAVANA, DISTRICT PANCH MAHALS.

21. KUND, LAVANA, DISTRICT PANCH MAHALS.

22. JAINA TEMPLE, ABHAPUR, DISTRICT SABAR KANTHA.

23. SHARNESHVAR TEMPLE, ABHAPUR, DISTRICT SABAR KANTHA.

24. JAINA AND SIVA TEMPLES, ANTARSUBA, DISTRICT SABAR KANTHA.

25. SANTHALESVARA TEMPLE, MATHASULIA, DISTRICT SABAR KANTHA.

26. HARISHCHANDRA-NI-CHORI, SHAMALAJI, DISTRICT SABAR KANTHA.

27. PRACHINA-VAV, HAMPUR, DISTRICT SURENDRANAGAR.

KERALA

Repairs were undertaken to the following monuments. The nature of the work consisted largely of strengthening of damaged portions, pointing and plastering, eradication of tress with the help of tree-killer, preservative coating on wood-carvings and erection of fencing.

28. CHENTHAMATHU TEMPLE, CHATHANNORE, DISTRICT QUILON.

29. KOTTUKAL TEMPLE, DISTRICT QUILON.

30. IRUNILAKKOD TEMPLE, DISTRICT TRICHUR.

31. THIRUNARAYANAPURAM, CHIRAYINKIL, DISTRICT TRIVANDRUM.

MAHARASHTRA

32. SONERI MAHAL, AURANGABAD.—The monument stands in need of large-scale conservation-works, the first phase of which has been completed this year.

33. FORT, AMALNER, DISTRICT JALGAON.—The gates and bastions were repaired and some portions rebuilt.

34. FORT, KANDHAR, DISTRICT NANDED.—The fort was cleared of thick vegetation and trees.

ORISSA

35. KANAKESVARA GROUP OF TEMPLES, KUALO, DISTRICT DHENKANAL.—Though important, the group is in a highly dilapidated condition. The entire area is full of debris of this *panchayatana* group of temples. In the first stage, the clearance of debris has been undertaken.

36. SUKSHESVARA TEMPLE NEAR BHUBANESWAR, DISTRICT PURI.—The temple was renovated, care being taken to emulate the original shape and design as far as possible.

37. CHANDI TEMPLE, KENDULI, DISTRICT PURI.—The work of conservation of brick-built *sikhara* of the *deul* is in progress.

RAJASTHAN

The following monuments were repaired:—

38. AKBAR'S FORT, AJMER.

39. TORANA, BAGHERA, DISTRICT AJMER.

40. SIVA TEMPLE, THANWALA, DISTRICT NAGAUR.

41. AMBER PALACE, AMBER, DISTRICT JAIPUR.

TAMIL NADU

42. CHOKKISVARA TEMPLE, KANCHIPURAM, DISTRICT CHINGLEPUT.—In continuation of the last year's work (*1968-69,* p. 105), the temple received further conservation measures; the walls of the *vimana* were reset after supplying the missing stones and the images placed in the appropriate niches of the *griva.* The figures of Nandi were reset in their proper places. The roof was rendered waterproof and the joints in the masonry treated with epoxy resin. A notice-board, giving historical details about the temple, was put up.

43. LADAN KOIL, ANAMALAI, DISTRICT MADURAI.—A. barbed-wire fencing, with a door, was provided in front of the cave dedicated to Subrahmanya. A notice-board, giving historical details of this temple, was put up. An impervious coat was given over the inscription on the rock-face to arrest weathering action.

44. GANGAIKONDACHOLISVARA TEMPLE, KUZHAMBANDAL, DISTRICT NORTH ARCOT.—The fallen and dislodged walls of the *maha-mandapa* were rebuilt and Nandi installed on a pedestal constructed for the purpose. The flooring inside the *mandapa* and *antarala* was made good. The fallen pillars of the *nritta-mandapa* were reset in position.

The mined Mahavishnu temple, situated to the south-west of the village, was cleared of debris and the dislodged images of Mahavishnu and his consorts installed in their proper position. The idol of Mahavira found in an adjoining field was installed on a platform. A noticeboard, giving historic details, was provided.

45. SADAIYAR KOIL, THIRUCCHINNAMPUNDI, DISTRICT THANJAVUR.—The vegetation over the *vimana* and accumulation of debris and earth were cleared down to the base. The operations brought to light beautiful panels carrying scenes from the *Ramayana* and *Siva-purana,* carved on the base. The conservation of the superstructure of the *vimana* is in progress.

46. TWIN TEMPLE, KILAIYUR, DISTRICT TIRUCHCHIRAPPALLI.—The temple received the following large-scale repairs. The growth of vegetation was removed. The damaged brick flooring in front of the Amman temple was relaid with new bricks. The leaky roofs of the sub-shrines of Chandesa, Surya, Sapta-matrikas and Vinayaka were rendered water proof. The missing stones of the well inside the compound were restored. Inscriptions on the bases of the main shrines were exposed after removing the adjoining portion of the pavement which concealed them and a retaining-wall provided to keep in position the undisturbed portion of the pavement. A wire-mesh was provided for preventing the entry of bats into the *gopura.* The damaged floors in the shrines of Surya, Sapta-matrikas and Arunachalesvara were properly reset. A notice-board, giving the historical details of the temple was prepared.

47. SVASTIKA WELL, TIRUVELLARAI, DISTRICT TIRUCHCHIRAPPALLI.—The well was desilted to a depth of about 2 m. A ramp was provided around the parapet-wall of the well to drain off rain-water. The dislocated inscribed coping was reset.

IX. EXPEDITION OUTSIDE INDIA

PRESERVATION OF BUDDHIST SHRINES AT BAMIYAN, AFGHANISTAN

A cultural agreement was signed between India and Afghanistan in 1969 according to which the experts of the Archaeological Survey of India are to conserve, with Afghan collaboration, the famous rock-cut Buddhist shrines at Bamiyan containing the two tallest known Buddha images and mural paintings. The project, which is proposed to be completed in four years, was launched with the arrival of the Indian team of experts in Afghanistan in July, 1969.

It was decided to carry out repairs first to the Smaller Buddha. It was seen that the right wall of its niche had developed dangerous cracks and fractures and a tall buttress was constructed in the past to support the wall. Since this is an incongruity, it is proposed to first strengthen the fractured portion of the wall by providing tie-rods duly embedded in the rock and then to treat the buttress in a manner so as to merge with the rock-surface. Further, as the water from the snow-melt descending from the hilltop was eroding the entire facade of the Smaller Buddha and the adjoining shrines, it was decided to drain off the water from the facade to either side. On the chemical side it was decided to clean and preserve the paintings in the niche and the adjoining shrines.

During this year, efforts were made to collect construction material and chemicals which proved a difficult and time-consuming task. As an experimental measure, paintings in an important cave were cleaned (pl. LXXXIII A-B) with the chemicals carried by the team and the experiments proved successful. His Majesty the King of Afghanistan, who visited the site on the 3rd October, 1969, with some Afghan officials, was happy to see the true brightness of the paintings revealed by chemical cleaning. The broken edges of the plaster bearing the paintings were also filletted (pl. LXXXIV A-B) and loose painted portions fixed to the walls.

A beginning was made with the work of structural repairs and, as a preliminary, the work of removal of accretions and decayed rock was taken up in front of the Smaller Buddha and from the neighbouring shrines. Tubular scaffolding to a height of about 35 m. was erected against the buttress wall of the niche and the crack in the west wall of the niche was spanned accross with an R.C.C. slab to prevent ingress of snow and water. A large masonry cistern was also erected lower down for storage of water for conservation work.

X. ARCHAEOLOGICAL CHEMISTRY

TREATMENT OF MONUMENTS AND PAINTINGS

BIHAR

1. ANTICHAK, DISTRICT BHAGALPUR.—The terracotta panels of the excavations were desalinized. The salts are, however, rising up from the ground.

2. APHSAD, DISTRICT GAYA.—Stucco figures at the base of the hill were taken up for removal of salts.

DELHI

3. DIWAN-I-KHAS, RED FORT.—Cleaning of the golden paintings on the cloth ceiling was continued (*1968-69,* p. 106).

4. ASOKAN COLUMN WITH INSCRIPTIONS, FEROZSHAH KOTLA.—The pillar was cleaned of accretions. The flaking layers were fixed and cracks filled with resin with cold setting polyester.

GUJARAT

5. AHMAD SHAH'S TOMB, AHMADABAD, DISTRICT AHMADABAD.—The marble grave stone and *jalis* were cleaned of oil, dust and dirt.

6. TAMBEKARWADA, VADODARA, DISTRICT VADODARA.—Paintings on the wooden trellis and door in the first and second floors were cleaned of accretionary varnish and paint (pl. LXXXV A-B). Fixing of loose paint layers was also taken up.

KERALA

7. RAMA TEMPLE, TRIPARAYAR, DISTRICT TRICHUR.—The old preservative coat applied to the paintings had yellowed and the details got blurred by the deposit of soot, oil, dirt and dust. The accretionary deposits and the old preservative were carefully removed and the paintings were preserved and strengthened.

MADHYA PRADESH

8. BAGH CAVES, DISTRICT DHAR.—The paintings, which were thoroughly treated a few years ago, have again been damaged by the percolation of water. Paintings in Caves 2 to 5 were consolidated with resin solution. The damaged and loose edges of the flaking plaster were filletted and fixed.

9. GATEWAYS AND RAILINGS OF BUDDHIST STUPAS, SANCHI, DISTRICT RAISEN.—Parts

of gateways of Stupas 1 and 2 and the inner railing of Stupa 1 were cleaned and given fungicidal treatment.

10. VISVANATHA TEMPLE, KHAJURAHO, DISTRICT CHHATARPUR.—The *sikhara* was cleaned of lime-wash and moss and given fungicidal treatment, followed by a coating of preservative solution.

11. IMAGE OF VARAHA, UDAIGIRI CAVES, DISTRICT VIDISHA.—Salts were removed and surface consolidated with a coat of preservative.

MAHARASHTRA

12. ELLORA CAVES, DISTRICT AURANGABAD.—The edges of paintings in Caves 32 and 33 were filletted.

13. AJANTA CAVES, DISTRICT AURANGABAD.—The edges of paintings in Caves 17 and 26 were filletted and chemical treatment carried out to Cave 6.

14. BIBI-KA-MAQBARA, AURANGABAD.—The marble *jali* in the main mausoleum has been cleaned.

MYSORE

15. TIPU SULTAN'S PALACE, BANGALORE.—The loose pigments were consolidated and chemical treatment of the paintings taken up.

16. CHENNAKESAVA TEMPLE, BELUR, DISTRICT HASSAN.—The chemical preservation of the sculptures and reliefs in the interior and exterior of the temple, started in 1967-68, is in progress. During this year, an area of 262 sq. m. was treated out of a total area of 2950 sq. m.

17. GOMMATESWARA STATUE, SRAVANABELAGOLA, DISTRICT HASSAN.—The chemical preservation work taken up in the previous year (*1968-69,* p. 107) was completed. The earlier temporary preservative coating of wax was removed and a fresh protective coating was applied.

18. KESAVA TEMPLE, SOMANATHAPUR, DISTRICT MYSORE.—The preliminary collection of materials has been made to commence preservation work early next year.

ORISSA

19. LINGARAJA TEMPLE, BHUBANESWAR, DISTRICT PURI.—The treatment of Karttikeya, Ganesa (pl. LXXXVI A-B), Nandi, and Nisha Parvati temples in the precincts was completed. Fungicidal and preservative treatments were also given.

20. DAKSHA PRAJAPATI TEMPLE, BANPUR, DISTRICT PURI.—The cleaning work was taken up from the top of *Jagamohana* together with the removal of bleachable salts.

21. SUN TEMPLE, KONARAK, DISTRICT PURI.—Images in the sanctum and some loose sculptures in the compound were cleaned and fungicidal and preservative treatments given.

PUNJAB

22. TOMB OF PUPIL MUSICIAN, NAKODAR, DISTRICT JULLUNDUR.—The coloured tiles and paintings on the walls were cleaned and fungicidal and preservative treatments given.

TAMIL NADU

23. GOVARDHANA PANEL, MAHABALIPURAM, DISTRICT CHINGLEPUT.—The removal of the hard stalactitic incrustation, commenced in the previous year (*1968-69,* p. 109), was continued.

24. BRIHADISVARA TEMPLE, THANJAVUR.—Under annual repairs, some of the panels in the circumambulatory passage of Chambers 11 and 14 were cleaned of accretions including the old yellowed preservative coat, and were given preservative treatment. Loose bulges and paint flakes were consolidated and filletted in Chambers 1-3, 5, 7-9, 11 and 13-15.

UTTAR PRADESH

25. RANI LAKSHMI BAI'S PALACE, JHANSI, DISTRICT JHANSI.—Chemical treatment of paintings in the Rani's retiring room was continued. Loose plaster was strengthened and fixed and preservative coating applied.

WEST BENGAL

26. JOR BANGLA TEMPLE, VISHNUPUR, DISTRICT BANKURA.—The terracotta panels were cleaned of accretionary layers of soot, oil and grease.

27. BRINDABAN CHANDRA TEMPLE, GUPTIPARA, DISTRICT HOOGHLY.—Wall paintings in the outer verandah were cleaned and preserved. The work is to be continued.

TREATMENT OF EXCAVATED OBJECTS & MUSEUM EXHIBITS

Antiquities, comprising mainly copper coins from Hauz Khas, Delhi, numbering about ten thousand, were chemically treated and preserved. Besides, one hundred and thirty antiquities, comprising copper, iron, lead and bone objects from Kalibangan, District Ganganagar, Dharanikota, District Guntur and Burzahom in Kashmir, were treated and preserved. Besides, five hundred coins and one hundred iron implements were treated respectively in the laboratories of the Northern and Eastern Zones.

ANALYSES AND RESEARCH

Geochronological Studies.—Geochronological investigations were carried out on twelve soil specimens from different places, viz. Attirampakkam and Surutapallai in District Chingleput, Paiyampalli in District North Arcot and Adamgarh in District

Hoshangabad, and six laterite specimens from the last-mentioned site. Petrological studies on six rock specimens from the Red Fort, Delhi were completed.

Chemical Analysis.—Specimens of metal and rock were examined. Specific gravity of eighty Darora silver coins and eighteen Dharanikota glass specimens were also determined.

Experimental investigations are being carried out for preserving the bricks at the Asvamedha site at Kalsi. Cross-sectional study of paintings and decorated tiles from different places was also taken up.

On an investigation into the technique of wall-paintings in Akbar's library at Fatehpur Sikri, it was observed that the paintings were done on a very thin ground layer against the earlier belief that the paintings were executed directly on the stone surface.

In connection with the documentation of the chemical preservation work being conducted at Bamiyan, Afghanistan, a number of photographic prints and transparencies were prepared. Relevant drawings were also prepared in this connection.

GUJARAT

The following were treated chemically:

(1) Dome of Jaina temple, Abhapur, District Sabar Kantha,

(2) Plinth of a Jaina temple, Antarsuba, District Sabar Kantha,

(3) Dome of Kalesvari temple, District Panch Mahals.

RAJASTHAN

Nearly three thousand coins of copper and silver alloy, besides two hundred copper coins, were chemically treated and preserved. About 2009 m. of mural paintings in the Bhojansala of Amber Palace were restored. Chemical treatment was also given to twelve stone sculptures and fifteen other antiquities, besides twenty-two wall frames of textiles.

Some paintings on wood were chemically treated and preserved in the Central Museum at Jaipur.

XI. ARCHAEOLOGICAL GARDENS[1]

ANDHRA PRADESH

1. HILL-TOP GARDEN, NAGARJUNAKONDA, DISTRICT GUNTUR.—Besides effecting general improvement in the maintenance of gardens on the hill-top, extensive clearance operations were carried out around the jetty; the soil recovered from there was trans planted on a plot in front of the Archaeological Museum for laying out a decent lawn. The work is in progress.

ASSAM

2. VISHNUDOL, JAYASAGAR, DISTRICT SIBSAGAR.—The area around the Vishnudol temple has been fenced off with barbed wire for laying out a garden. The work is in progress. To augment and ensure adequate irrigation facilities to the garden, an electric pumping-set has been installed and a network of pipelines has been laid.

BIHAR

3. EXCAVATED REMAINS, KUMRAHAR, PATNA.—A thorough cleaning of the garden was undertaken and certain additions and alterations in the shrubbery and dot plants were made. The lawns were kept green throughout the year.

4. SHER SHAH'S TOMB, SASARAM, DISTRICT SHAHABAD.—The garden around the monument was further enriched with the introduction of new flower-beds and improved shrubbery. With the growth of the trees, the garden as a whole looks presentable.

DELHI

5. ARCHAEOLOGICAL AREA, QUTB, DELHI.—The Jangli-Bagh was thoroughly cleaned; rockeries, water pools, annual beds, etc., were added and picnic-spots introduced.

6. RED FORT, DELHI.—Weeding of the shrubberies was done. Some new varieties of shrubs were planted. *Saw* trees, bougainvilleas, thujas and roses were planted in the beds. Annual beds were introduced in the Diwan-i-Khas area. Pruning of the hedge was carried out.

7. ARAB-KI-SARAI, NEW DELHI.—The garden was kept clean throughout the year. Casualties of *ashok,* bougainvilleas, grevillas, etc., were replaced suitably. The lawns, roads and flower beds were kept in presentable condition.

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1 Information from: 17, the Director of Archaeology, Gujarat State; 18, the Director of Archaeology, Kerala State; 32, the Department of Cultural Affairs, Orissa State; 35, the Director of Archaeology' and Museums, Rajasthan State, and the rest from the Chief Horticulturist of the Survey.

8. HAUZ-KHAS, NEW DELHI.—The garden was maintained in a decent condition throughout the year with regular horticultural operations. To assure and augment the water-supply, an electric motor pumping-set is being installed.

9. HUMAYUN'S TOMB, NEW DELHI.—The garden was properly maintained with necessary .periodical horticultural operations. Some new varieties of roses and rare shrubs were introduced to enrich the garden. Plants such as *thujas* and cannas were replanted.

The Jangli-Bagh was thoroughly cleaned and picnic-spots were introduced.

The lower portion of nursery, attached to Humayun's tomb, was cleaned and dug up for planting some cuttings for multiplication of the plants required for replacement in the garden from time to time. The plants in the chick-house and glass-house were kept clean and healthy with periodical spraying of insecticides and pesticides. The collection was enriched with introduction of some new varieties.

10. JANTAR-MANTAR, NEW DELHI.—Some new varieties of roses were planted to enhance the beauty of the garden within the Jantar-Mantar complex. The watertightening of the Cabin Room was carried out. Replacement and repair of motor-pumps were done to ensure regular plying of the fountains.

11. KHAN-I-KHANAN'S TOMB, NEW DELHI.—The shrubs were pruned and casualties were rilled up. Bougainvilleas were dotted in different areas of the garden. *Saw* and *ashok* trees were brought to a proper shape.

12. KOTLA FIRUZ SHAH, NEW DELHI.—Despite water shortage, the garden was kept in a presentable state throughout the year. Arrangements are being made to install an electric motor pumping-set to regularize the water-supply.

13. LODI TOMB-COMPLEX, NEW DELHI.—Some annual beds and rose beds were added. The lawns were manured, mowed and weeded. Horticultural operations such as pruning, gootying, etc., were carried out.

14. PURANA QILA, NEW DELHI.—Extensive general clearance was done. Some deshaped, dead and unwanted trees were removed. The area round Sher-Mandal and a plot near the main gate were grassed with good quality of *dub.* Some annual beds were introduced. Pipelines were laid in the grassed area. The extensive work of laying out a garden inside this fort is in active progress.

15. TOMB OF SAFDARJANG, NEW DELHI.—In front lawns some new annual beds were introduced. The shrubbery was removed and the area dug up for plantation of roses. Weeding of the lawns was undertaken, besides general maintenance.

GOA

16. CHURCH GARDEN, VELHA GOA.—The work of sinking wells is in progress to over come the paucity of water necessary for the maintenance of the garden. Pits for plants were dug up further and boulders were removed to ensure better growth of plants.

GUJARAT

17. KUND, LABANA, DISTRICT PANCH MAHALS.—Arrangements are being made to develop a garden near the Kund.

KERALA

18. MISCELLANEOUS GARDENS.—The area around Pallipuram fort has been fenced and a garden is being laid therein with plants conforming to the character of the monu ment. Benches were added to the gardens at Padmanabhapuram and Krishnapuram.

MADHYA PRADESH

19. ANCIENT TEMPLES, KHAJURAHO, DISTRICT CHHATARPUR.—The lawns were dug and dressed for regrassing. Casualties in shrubs, rose and canna beds were filled. Rare varieties of bougainvilleas were dotted and water-supply improved.

MAHARASHTRA

20. BIBI-KA-MAQBARA, AURANGABAD.—Excessive vegetation was removed and plants like royal palms, biota compacta, etc., were planted. Numerous foliage plants have been propagated. To augment the water-supply, the existing well was further dug to a depth of about 3048 m. which yielded enough quantity of water for the proper development of the garden. About 8-1 hectares of land, which was cultivated under the Grow More Food Campaign, yielded good Jowar crop.

21. SHANWARWADA, PUNE.—The shrubs planted during the previous year have come up well. The garden was kept presentable after periodical horticultural operations.

MYSORE

22. ALI II RAUZA, BIJAPUR.—Crops were cultivated under the Grow More Food Campaign. The garden was maintained in a good condition.

23. ARQILA, BIJAPUR.—The problem of water-supply was solved by taking a new connection from Gagan-Mahal pipeline. The pergolas have since been covered with creepers. The shrubberies have stabilized. The trees planted along the slopes have come up nicely. The garden has considerably improved.

24. ASAR MAHAL, BIJAPUR.—A new connection was taken from the pipeline running from Gagan-Mahal to Gol-Gumbad to increase the supply of water to the garden. The garden was rejuvenated. Dot-plants, flower-beds and shrubs were replanted; the ground was scraped; fertilizer applied and the lawn was revived.

25. GOL-GUMBAD, BIJAPUR.—All the gaps in the shrubberies were filled. Certain alterations were effected in the position of hedges and edges. Several thousands of plants were propagated in the nursery for supply to other gardens. The fruit plants and area cultivated under the Grow More Food Campaign yielded rich produce.

26. IBRAHIM-RAUZA, BIJAPUR.—Certain horticultural operations were carried out and the garden has considerably improved. The area, which was cultivated under the Grow More Food Campaign, was brought under ornamental gardening.

27. JOD-GUMBAD, BIJAPUR.—Some recently introduced fruit plants, such as *sapota* and guava have shown satisfactory growth. Adequate space available between the permanent plantation is being utilized for raising food crops under the Grow More Food Campaign.

28. HOYSALESVARA TEMPLE, HALEBID, DISTRICT HASSAN.—To overcome water shortage, deep boring outside the monument has been undertaken.

29. DARIYA DAULAT-BAGH, SRIRANGAPATNA, DISTRICT MANDYA.—Propagation work was kept in full swing in the nursery. Several thousand varieties of plants were reproduced and distributed to various gardens under the Southern Zone.

Cereals were grown under the Grow More Food Campaign in a plot covering about 8.1 hectares. The mango orchard in the upper terrace was improved and undulated area was suitably improved.

30. GUMBAZ, SRIRANGAPATNA, DISTRICT MANDYA.—Cereals were grown under the Grow More Food Campaign in an area of 2.43 hectares.

31. KESHAVA TEMPLE, SOMANATHAPUR, DISTRICT MYSORE.—With the addition of organic matter, new soil fertilizers and sand, the texture of the soil is gradually improving. Several new varieties of trees have been introduced. Royal palms alternating with bougainvilleas have been planted all along the drive.

ORISSA

32. MISCELLANEOUS GARDENS, DISTRICT PURI.—The gardens attached to the Jaideva Cultural Centre at Kenduli and Lakshmanesvara temple, Bhubaneswar, are gradually growing.

RAJASTHAN

33. ANASAGAR BARADARI, AJMER.—Flower beds were filled with different varieties of annuals. Periodical operations were held and the lawns were mowed and fertilized.

34. BHAWANS, DIG, DISTRICT BHARATPUR.—Some roses and canna beds were intro duced besides jasminums and annual beds. Fountains were played during the cattle fair. The garden was kept presentable throughout.

35. MISCELLANEOUS GARDENS, RAJASTHAN.—A few flower-pots were added to the small garden inside Akbar's fort at Ajmer. The garden within Amber palace-complex, Dilaram Bagh at Amber, gardens attached to the astronomical observatory at Jaipur and Mandore monuments were maintained.

UTTAR PRADESH

36. FORT, AGRA.—Extensive area outside the fort was converted into ornamental garden, and a small plot was brought under cultivation. The gardens inside the fort were maintained attractively.

37. KHAN-I-'ALAM NURSERY, AGRA.—A deep tubewell was successfully bored. Construction of a Cabin Room has been started to install a suitable deep well pumping-set for continuous water-supply to the fountains at the Taj. Nursery activities were extensively carried out. High qualities and rare varieties of different ornamental plants were procured from many places in the country for the nursery.

38. TAJ-MAHAL, AGRA.—The garden was maintained with utmost care. The beds all along the channels were planted with verbenas.

The returfing of lawns in the forecourt is in progress; the entire area has been dug up for grassing purposes. The ornamental fencing, which was removed while laying concrete in the forecourt, is being refixed.

39. GROUP OF MONUMENTS, FATEHPUR SIKRI, DISTRICT AGRA.—The bougainvilleas on either side of the drive from Agra gate to Diwan-i-'Am remained in bloom in the major portion of the year. The roses and annuals were in full bloom. The lawns were mowed from time to time and kept green and attractive.

40. AKBAR'S TOMB, SIKANDARA, DISTRICT AGRA.—The garden was kept quite presentable throughout the year. Under the Grow More Food Campaign, food-crops like wheat, gram and barley were produced in a good quantity.

41. RESIDENCY, LUCKNOW.—Several new varieties of ornamental and foliage plants were introduced in the nursery. The rosarium has grown up nicely.

42. BUDDHIST REMAINS, SARNATH, DISTRICT VARANASI.—Re-turfing of lawns was completed. Several varieties of roses were planted in the new beds prepared for the purpose. The overhead tank, which had collapsed during a storm, was reconstructed and normal water-supply to the garden restored. One more electric motor pumping-set was installed to ensure adequate water-supply.

XII. PUBLICATIONS

PUBLICATIONS OF THE SURVEY

1. ANNUAL REPORT ON INDIAN EPIGRAPHY.—The number for 1964-65 was brought out.

2. EPIGRAPHIA INDICA.—Parts V and VI of volume XXXVII were published.

3. EPIGRAPHIA INDICA—ARABIC AND PERSIAN SUPPLEMENT.—The number for 1968 was issued.

4. INDIAN ARCHAEOLOGY—A REVIEW.—The number for 1964-65 was published.

5. GUIDE BOOKS.—*Hampi* by D. Devakunjari was published.

6. MEMOIRS OF THE ARCHAEOLOGICAL SURVEY OF INDIA.—*Telkupi* (no. 76) by Debala Mitra and *Excavations at Kausambi 1949-50* (no. 74) by G. R. Sharma were released.

7. PICTURE POSTCARDS.—The sets of Ajanta (polychrome), Bijapur, Delhi A and B, Elephanta, Ellora, Gingee, Goa, Hampi, Mattancheri, Nalanda, Sanchi, Somanathpur and Sravanbelgola and loose polychrome cards of important Agra and Delhi monuments were reprinted.

8. SOUTH INDIAN INSCRIPTIONS SERIES.—Volume XIX was brought out.

OTHER PUBLICATIONS

BIHAR.—The Directorate of Archaeology and Museums, Bihar, brought out: (i) *Pataliputra Excavations 1955-56,* by B. P. Sinha and Lala Aditya Narain and (ii) *Vaisali Excavations 1958-62,* by B. P. Sinha and Sita Ram Roy.

GUJARAT.—The Department of Archaeology, Gujarat, published the following folders: (i) *Excavations at Rojdi and Prabhas,* and (ii) *Ancient Monuments of Gujarat.*

KERALA.—The Directorate of Archaeology, Kerala, has taken up the preparation of an illustrated book entitled *The Temple Architecture in Kerala.*

MAHARASHTRA.—The Department of Archives and Archaeology, Maharashtra, released: (i) *Catalogue of Coins in the Central Museum, Nagpur—Coins of the Mughal Emperors* (pt. I), by V. P. Rode, and (ii) an illustrated folder on Central Museum, Nagpur.

MYSORE.—*South Indian Temple Complex* by T. V. Mahalingam was published by

the Director, Kannada Research Institute, Dharwar. A comprehensive volume on the history of Karnatak is under print.

ORISSA.—The Director, Cultural Affairs, Orissa, released: (i) *Orissa Historical Research Journal,* Vol. XIII, no. 3 and XIV, nos. 1-4 and (ii) *Descriptive Catalogue of Oriya Manuscripts.*

RAJASTHAN.—The Director of *Archaeotures,* by Mohan Lai Gupta and (iii) *Jaipur* (i) *Researcher,* Vol. VII-IX, (ii) *Marwar Sculpes* by Mohan Lai Gupta and (iii) *Jaipur Sangrahalaya-Parichaya,* by Mohan Lai Gupta.

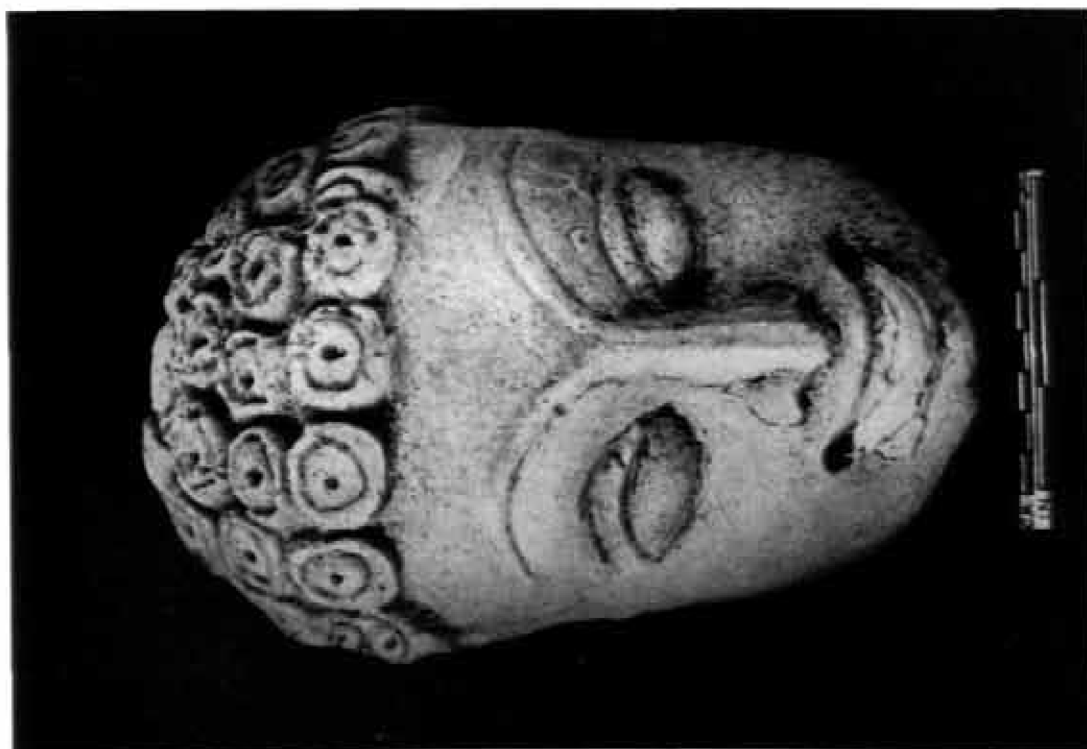
TAMIL NADU.—The Department of Archaeology published: (i) *Kailasanatha,* by R. Nagaswamy; (ii) *Mamallapuram,* by N. S. Ramaswamy; (iii) *Namakkal Caves,* by Vidya Dehejia, (iv) *Tamil Brahmi Inscriptions,* by I. Mahadevan; (v) *Gangaikonda-Cholapuram,* by R. Nagaswamy; (vi) *Kalavettin Kathai,* by Nadan Kasinathan; (vii) *Arunchorporul Kurippu,* by Saw. Ganesan; and (viii) *A Background to Restoration of Monuments in Southern India,* by G. R. H. Wright. *The Seven Pagodas* by William Chambers was reprinted.

TRIPURA.—The Department of Education, Tripura, brought out a booklet on the museum-collection.

UTTAR PRADESH.—Three numbers of the *Bulletin of Museum and Archaeology in Uttar Pradesh* were released by the Department of Cultural Affairs and Scientific Research, Uttar Pradesh.



B



B

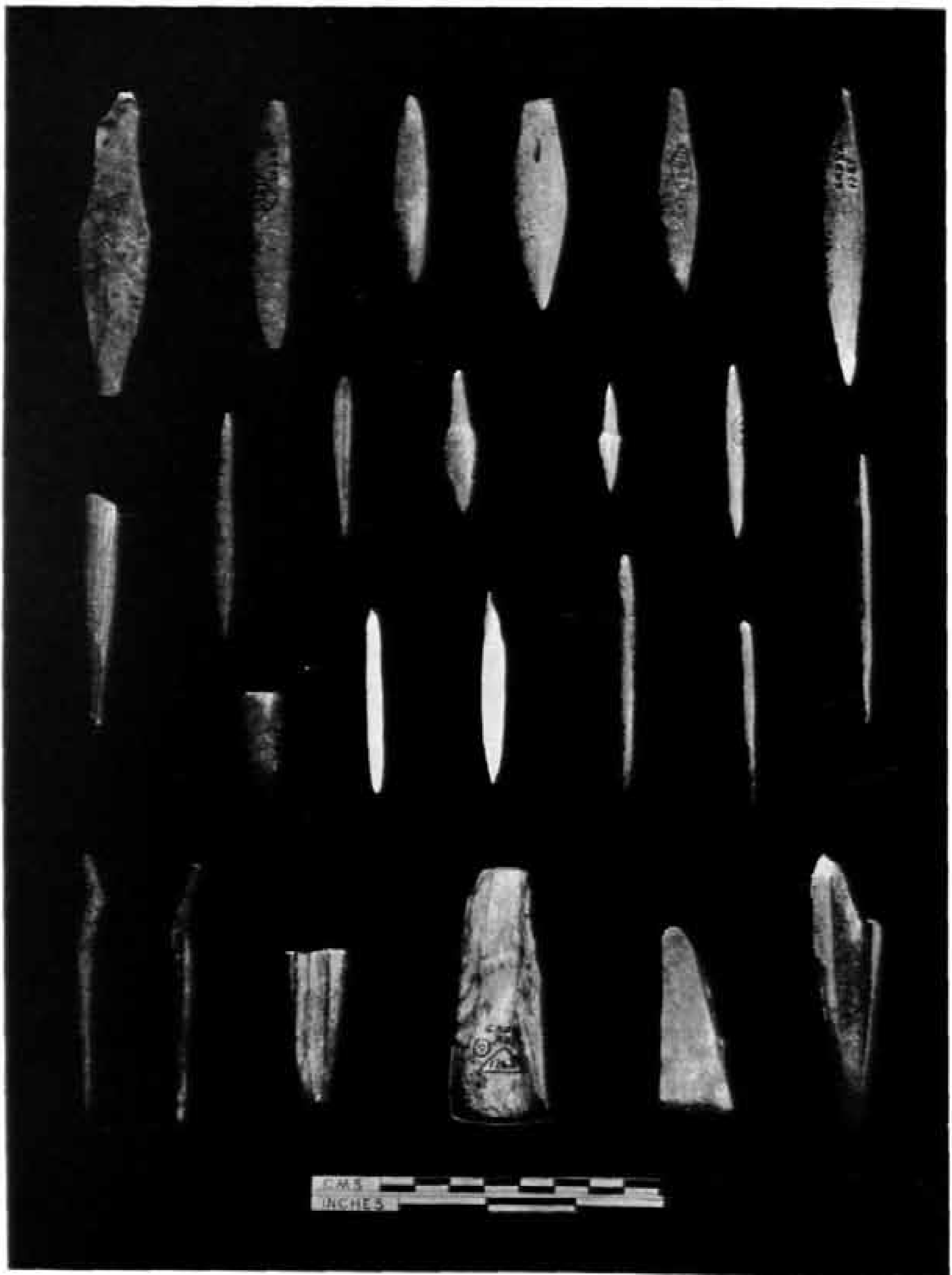
Bhattiprolu: A, *stucco head of Buddha*; B, *stone sculpture of seated nagaraja*. *See p. 1*



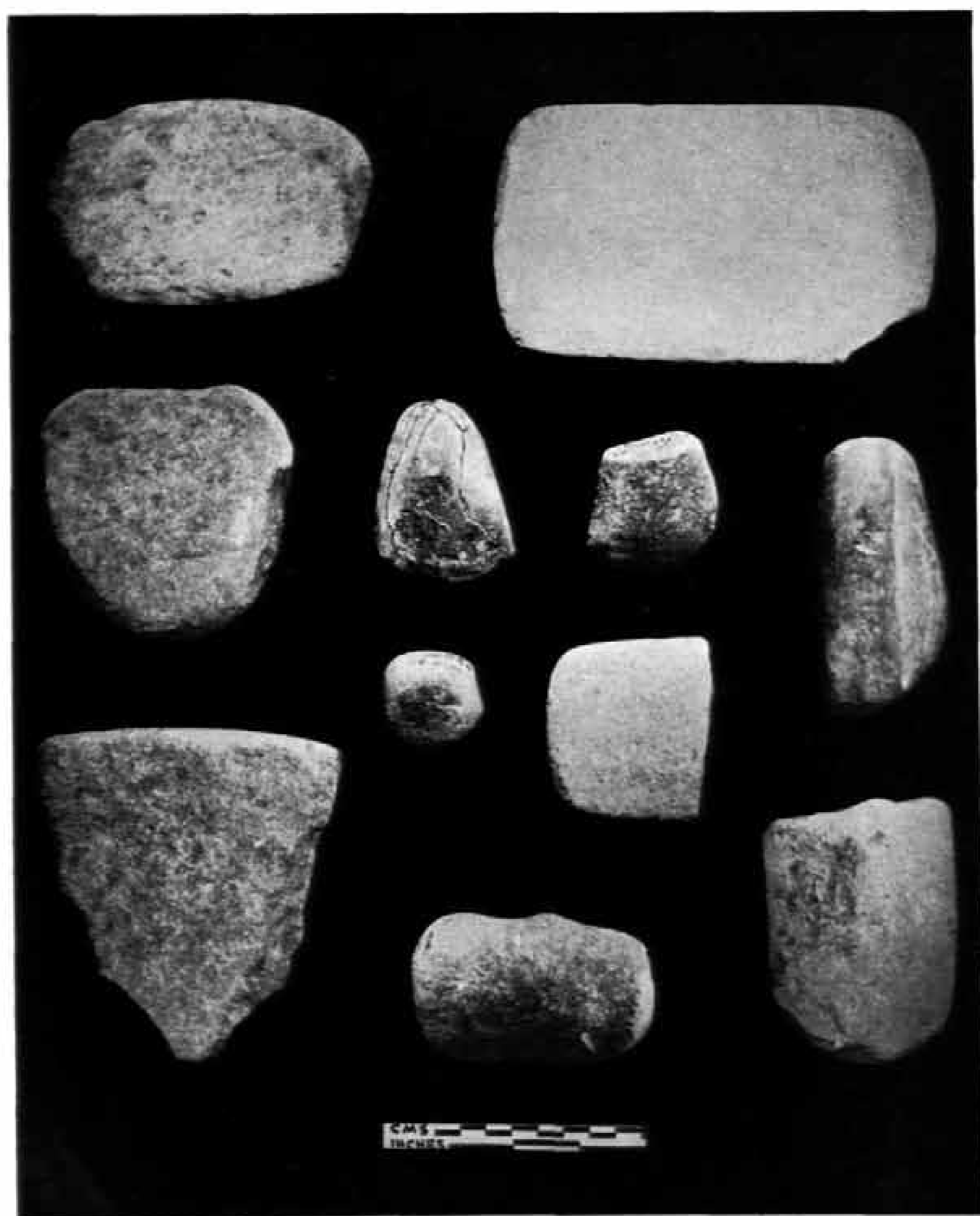
Chirand: objects of bone and antler. See p. 3



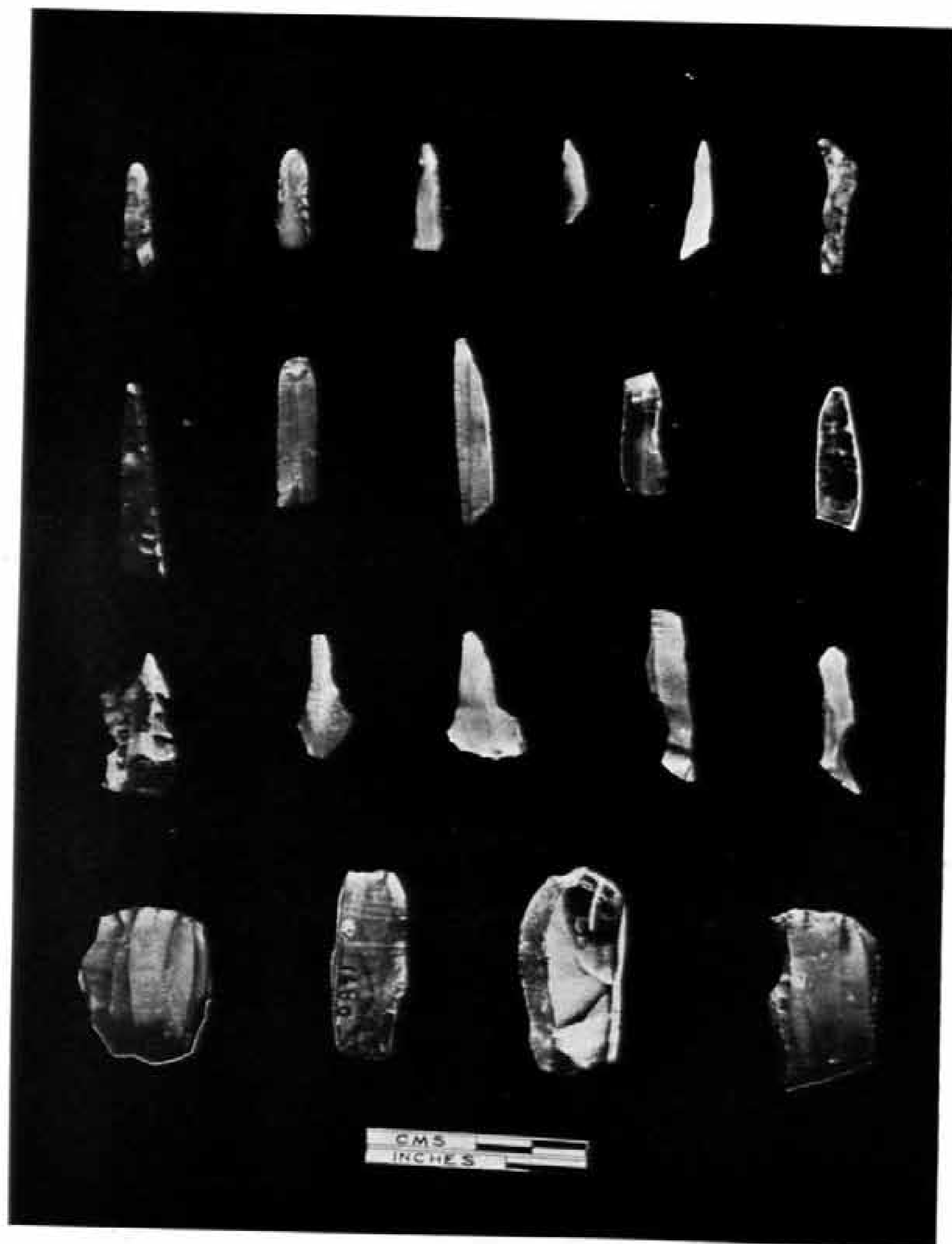
Chirand: objects of bone and antler. *See p. 3*



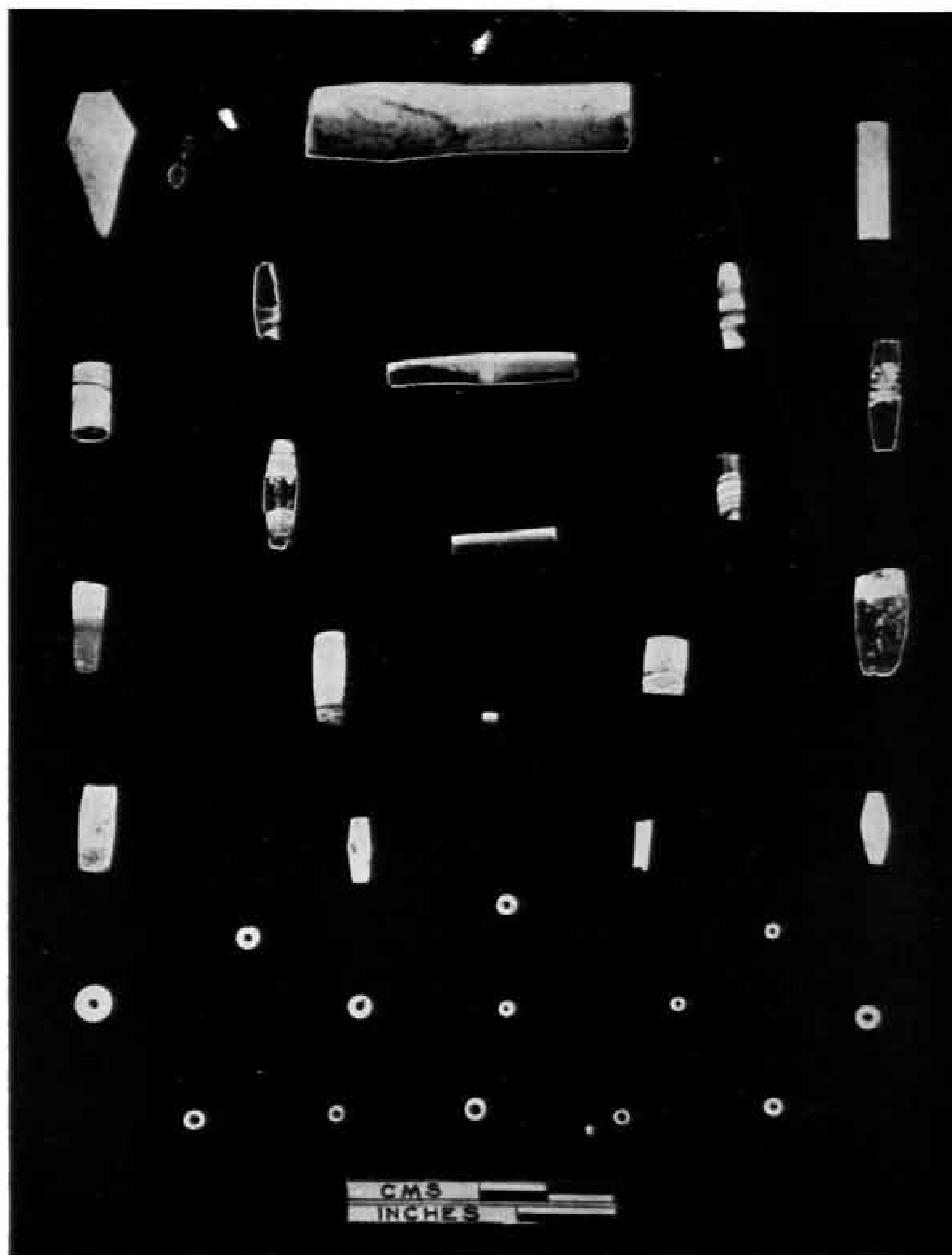
Chirand: objects of bone and antler. *See p. 3*



Chirand : stone objects. *See p. 3*



Chirand : stone tools. *See p. 3*



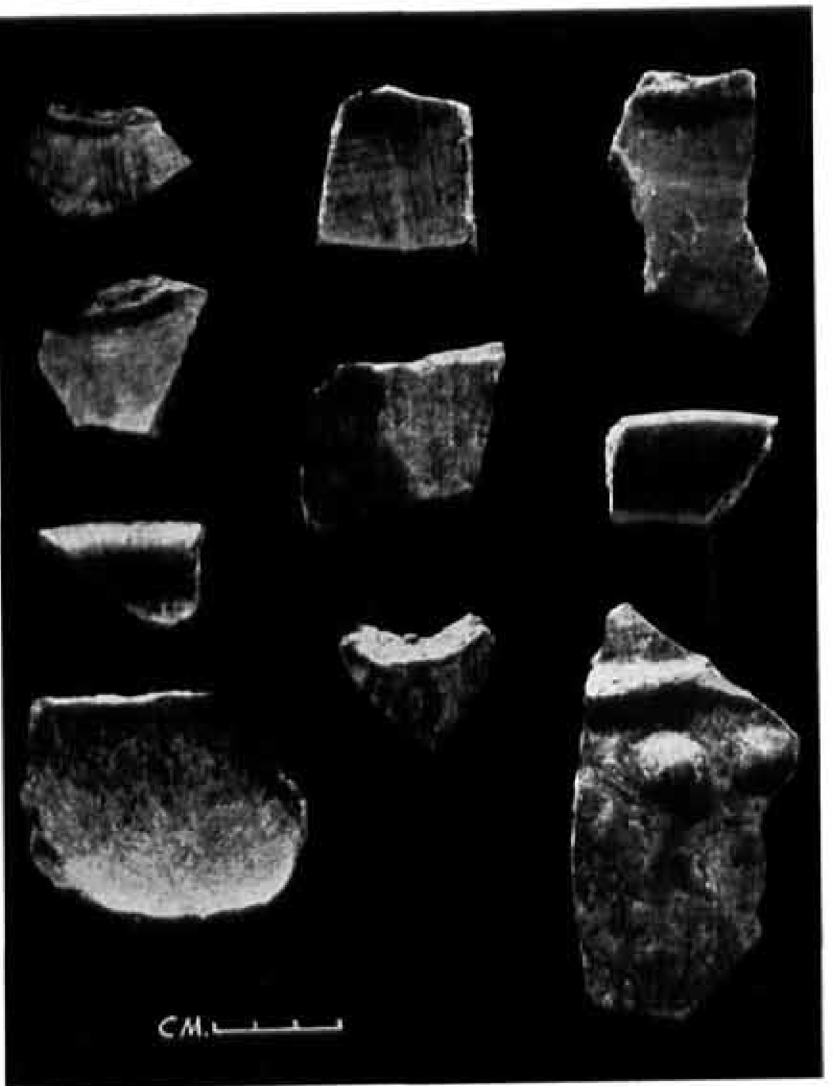
Chirand : beads. *See p. 3*



Chirand: terracotta and stone objects. *See p. 3*

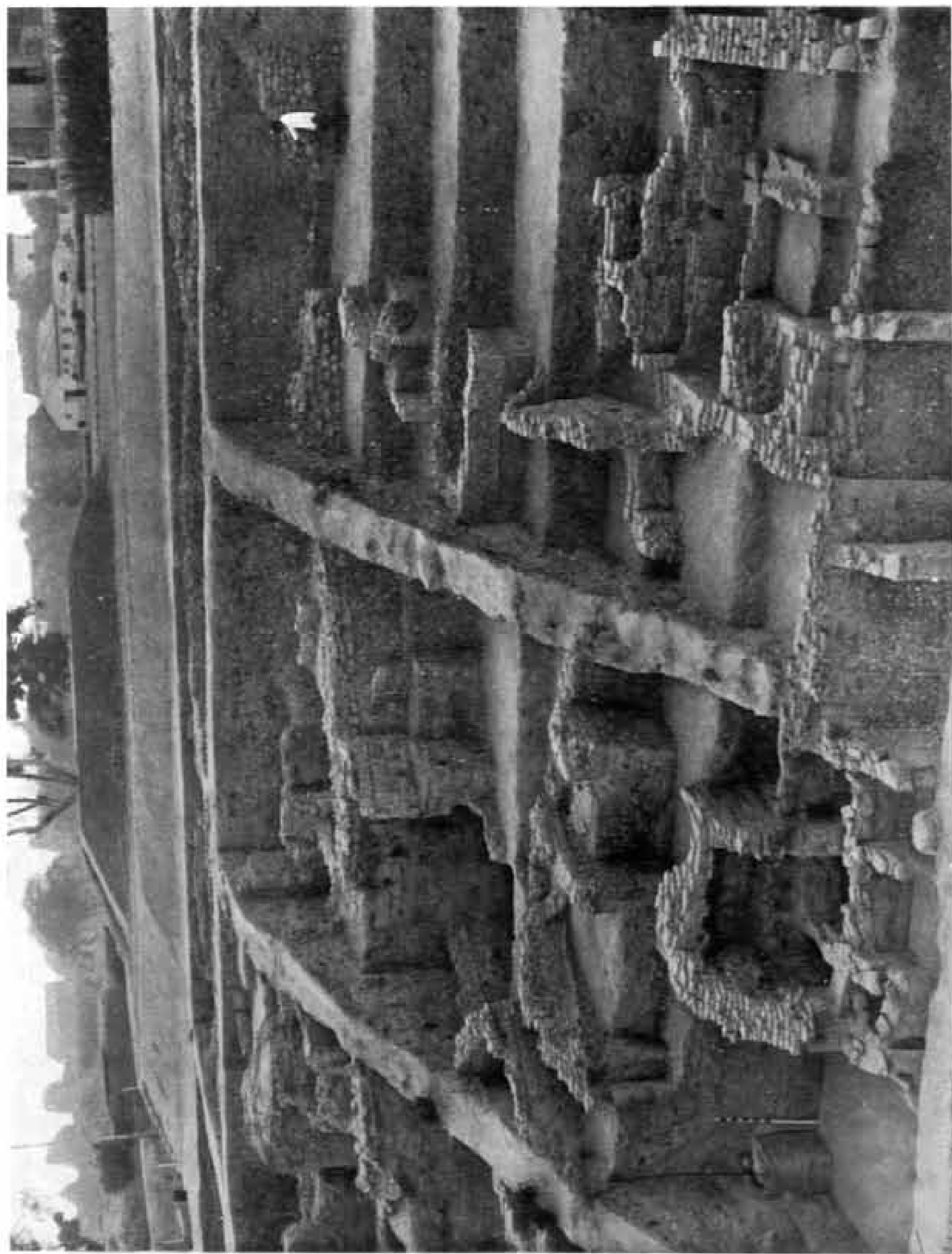


A



B

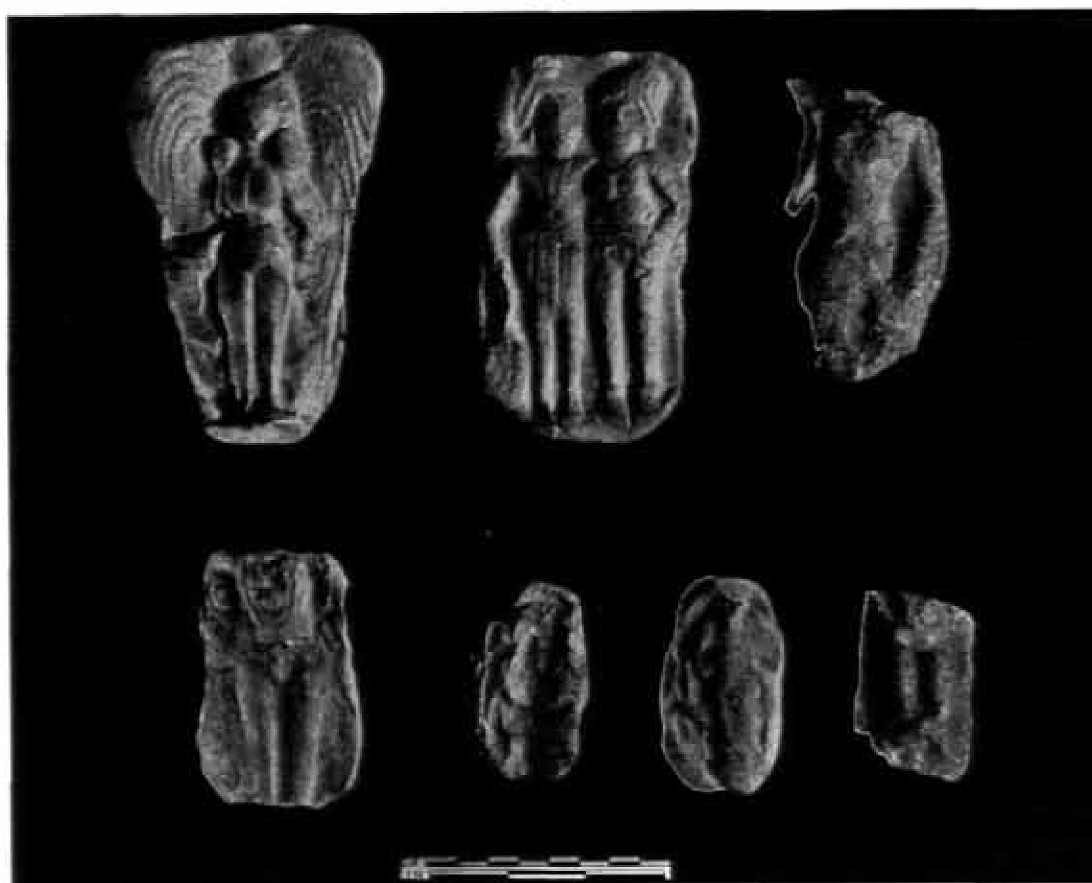
Chirand : A, *pottery-types* ; B, *painted designs.* *See p. 3*



Purana Qila : general view of structures of different periods. *See p. 4*

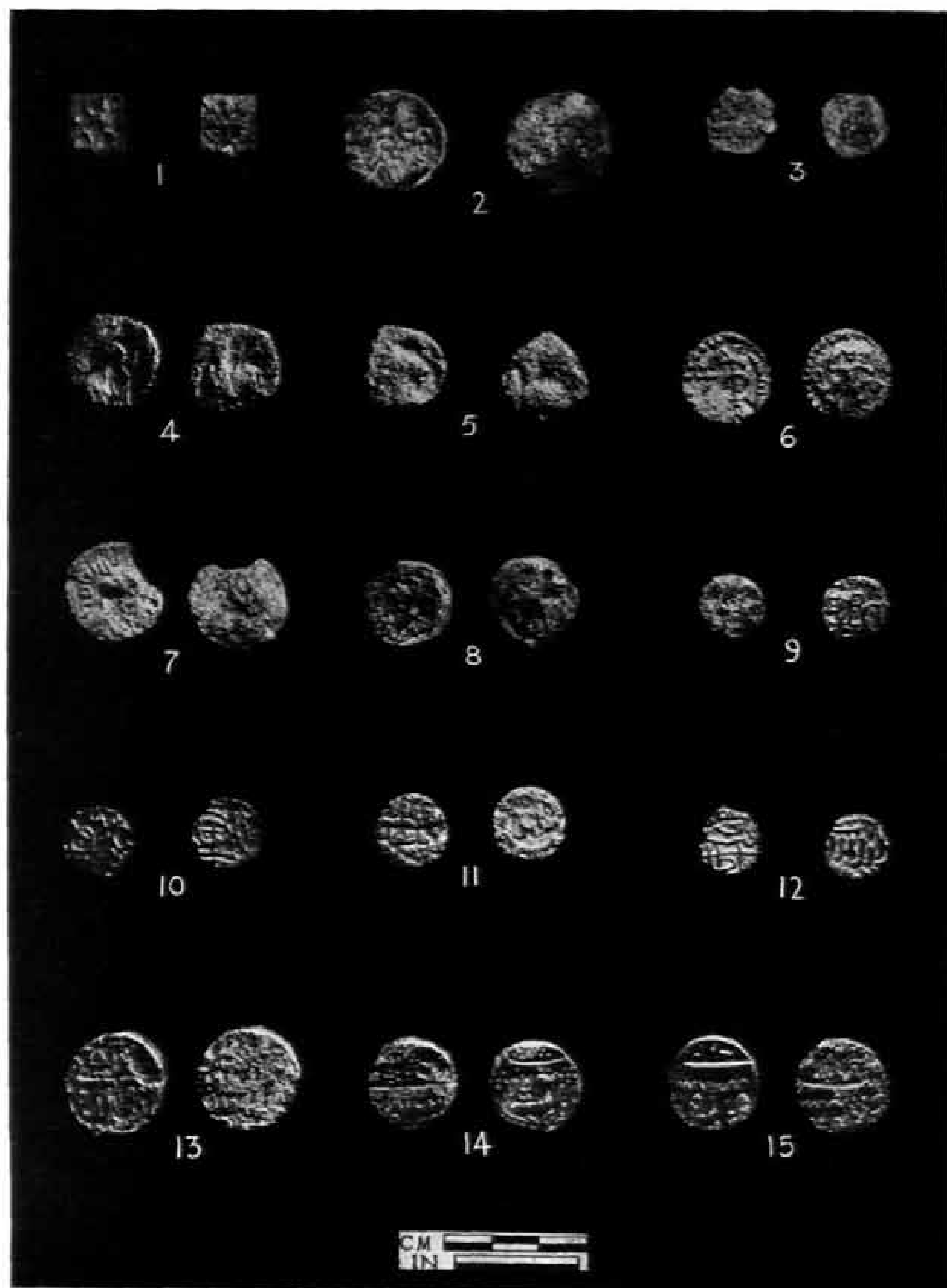


A



B

Purana Qila : A, *terracotta human figurines, Mauryan Period* ;
B, *terraccotta plaques, Sunga Period.* *See p. 4*



Purana Qila: coins of different Periods. *See pp. 4 and 5*



A



B

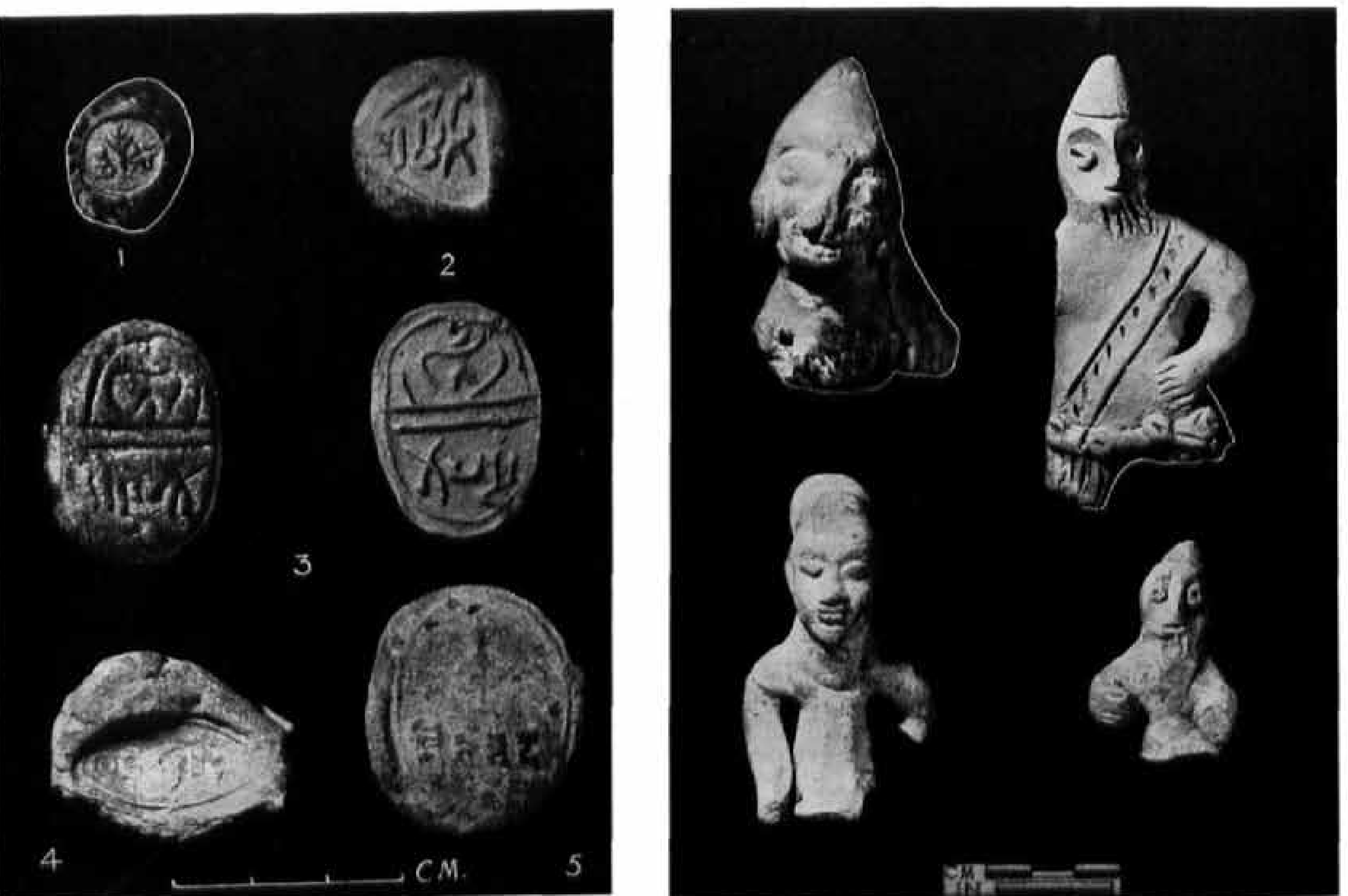
Purana Qila : A, *remains of a structure with a flight of steps;* B, *terracotta yaksha (Kubera) figure and a turhaned head, Saka-Kushan Period.* *See p. 5*



Purana Qila: moulded pottery lid bearing kinnara and a terracotta female figurine, Gupta Period. See p. 5

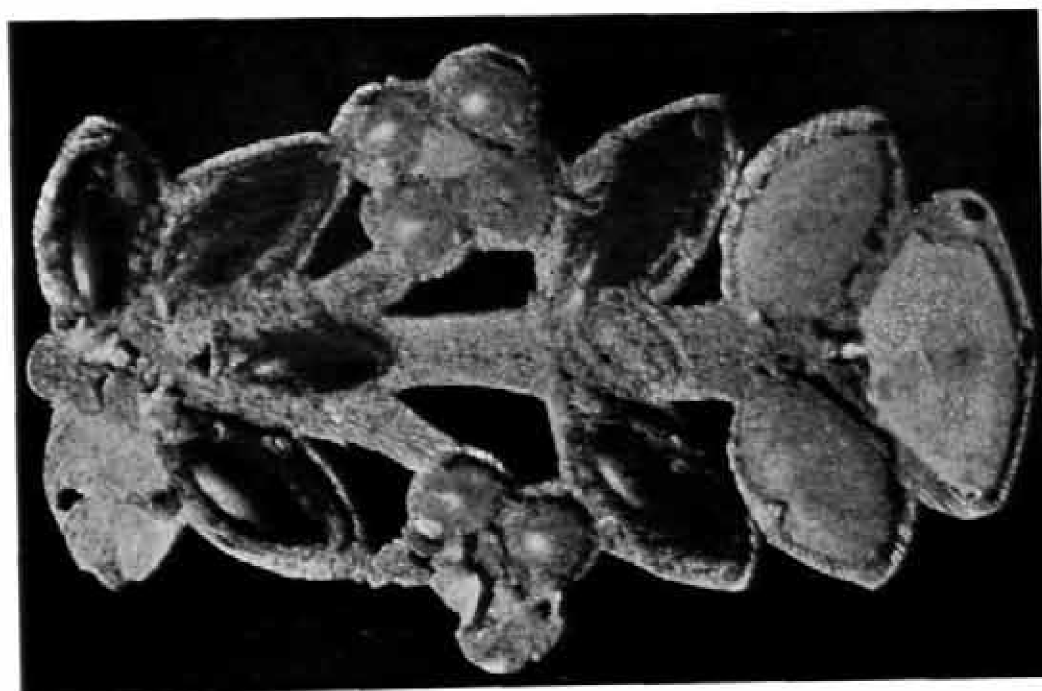


Purana Qila: rubble fortification-wall, Rajput Period. *See p. 5*



A B

Purana Qila: A, *terracotta seals and sealings of Maurya, Sunga and Kushan Periods*; B, *terracotta human figurines, Rajput Period.* *See pp. 4 and 5*

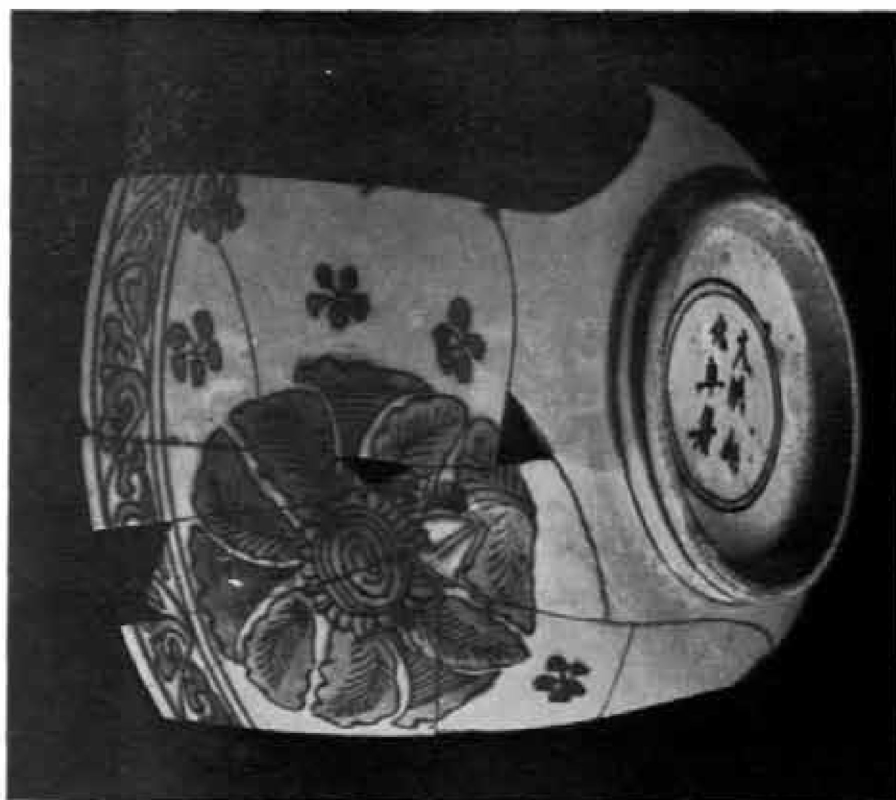


B



A

Purana Qila : A, *a surahi with cypress designs*; B, *gold ear-ornament, Mughal Period.* *See p. 6*

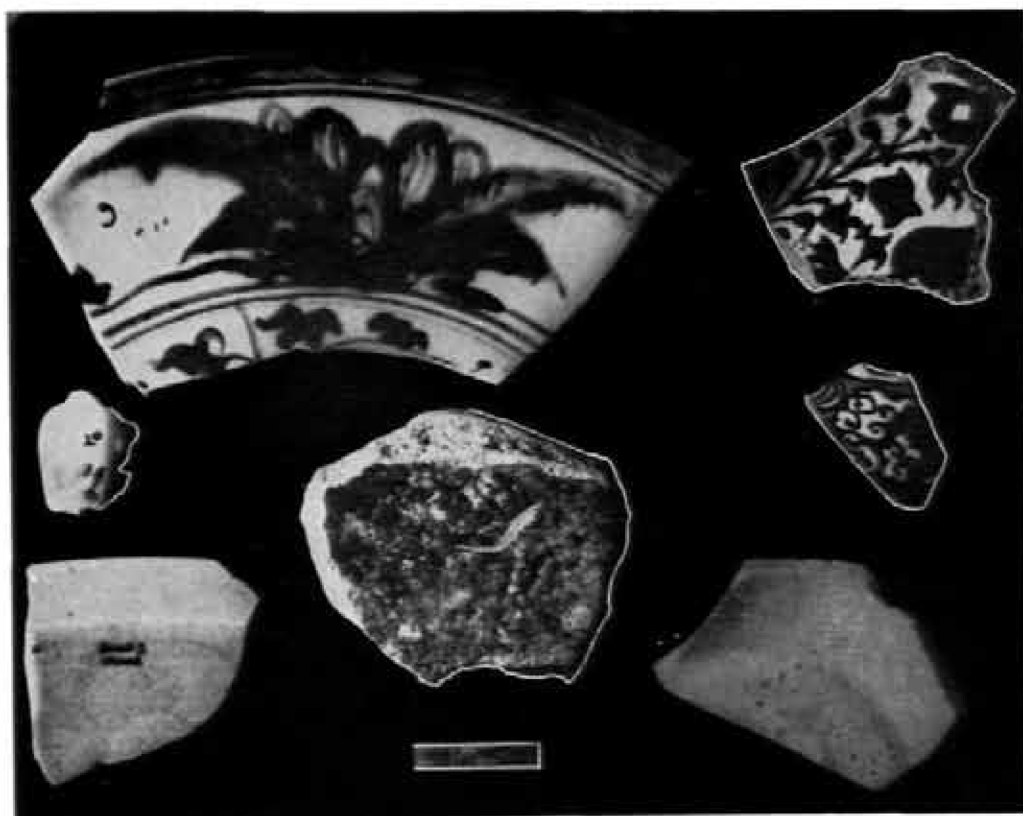


B

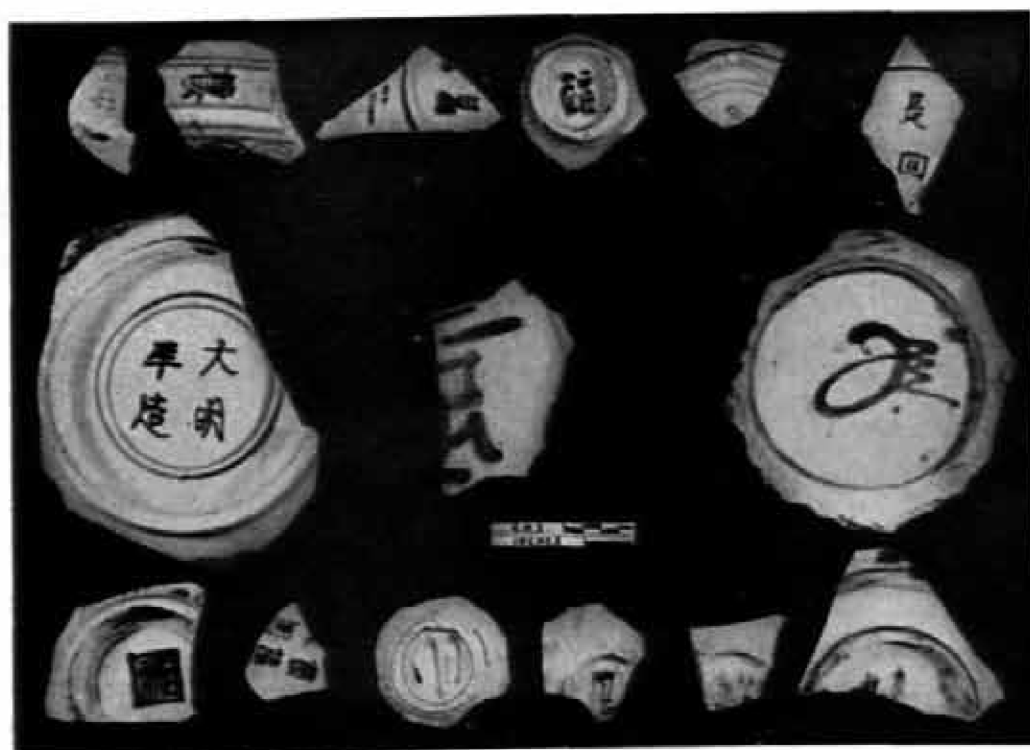


A

Purana Qila : imported chinese pottery. *See p. 5*

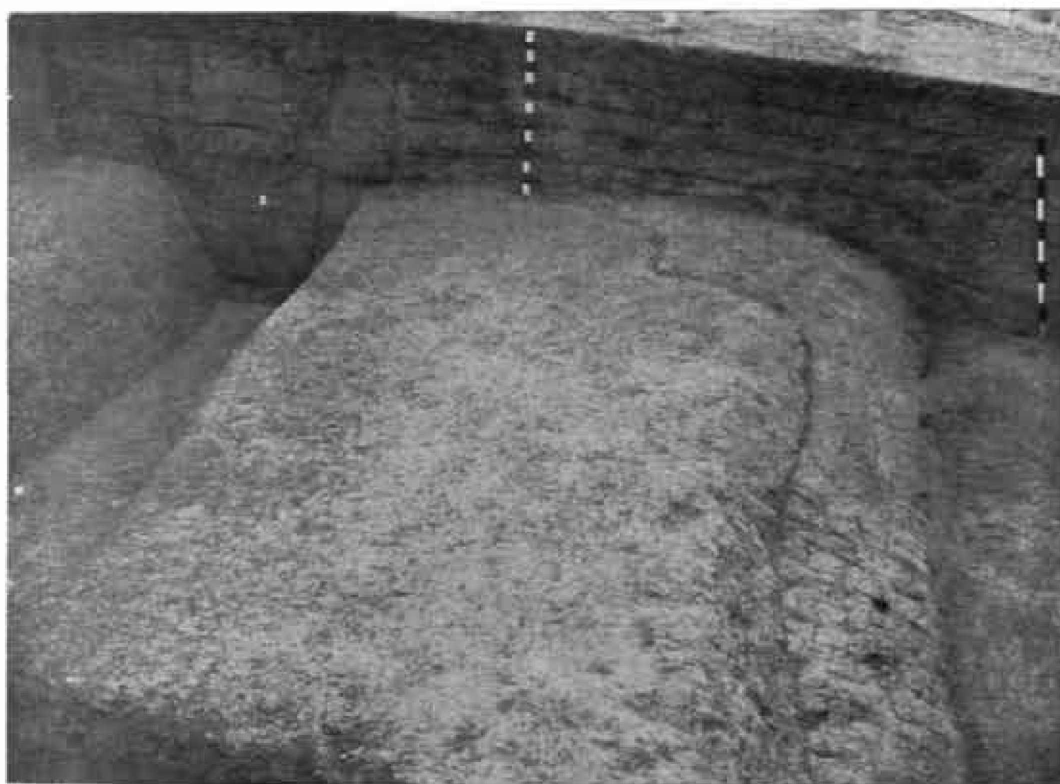


A

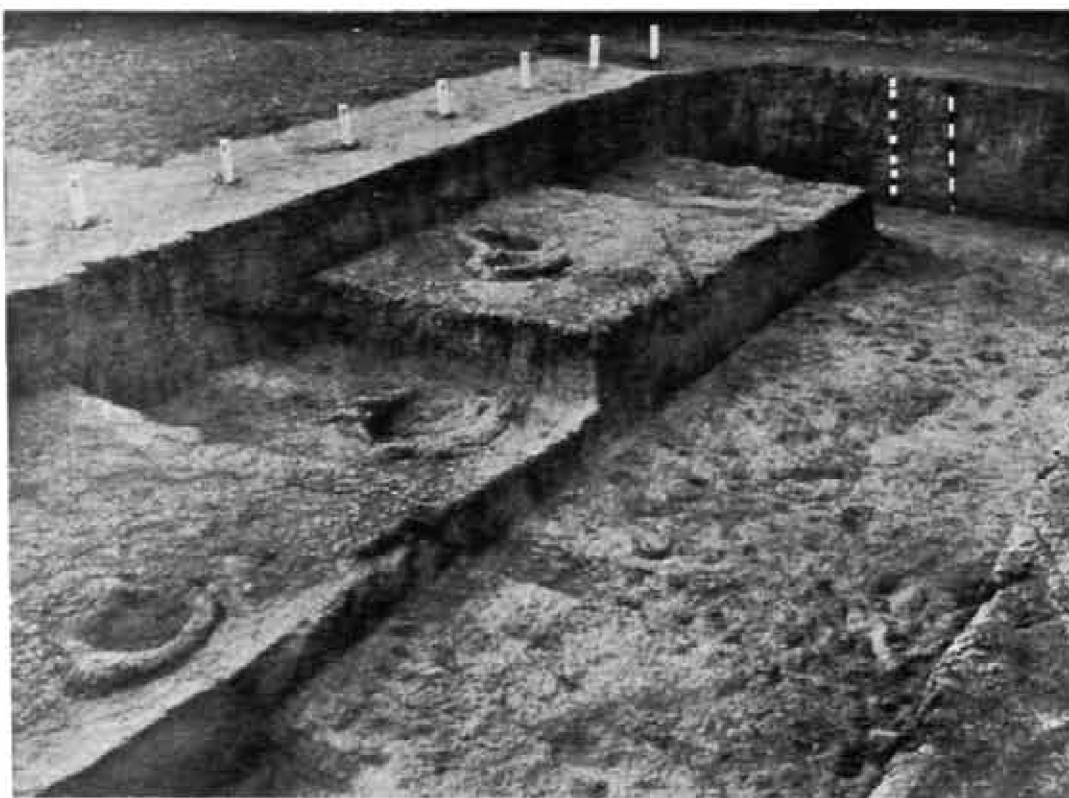


B

Champaner : Chinese porcelain. *See p. 7*



A



B

Malvan : A, *a ditch;* B, *series of ovens, Period 1.* *See pp. 7 and 9*



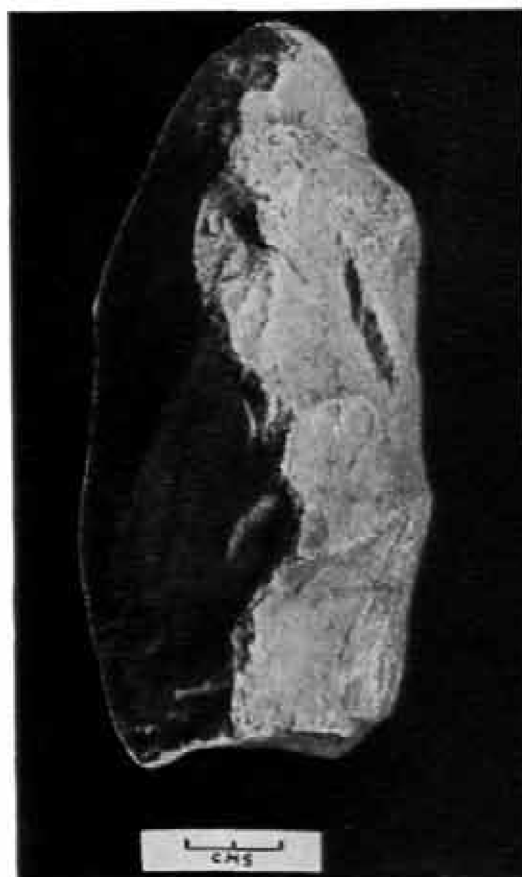
A



B



C



D

Pahalgam : A *and* B, *flake;* C *and* D, *an Abbevellian handaxe.* *See p. 13*



A



B

A : *Pahalgam, Second Glacial deposits;* B : *Waztal, menhirs.* *See p. 13*

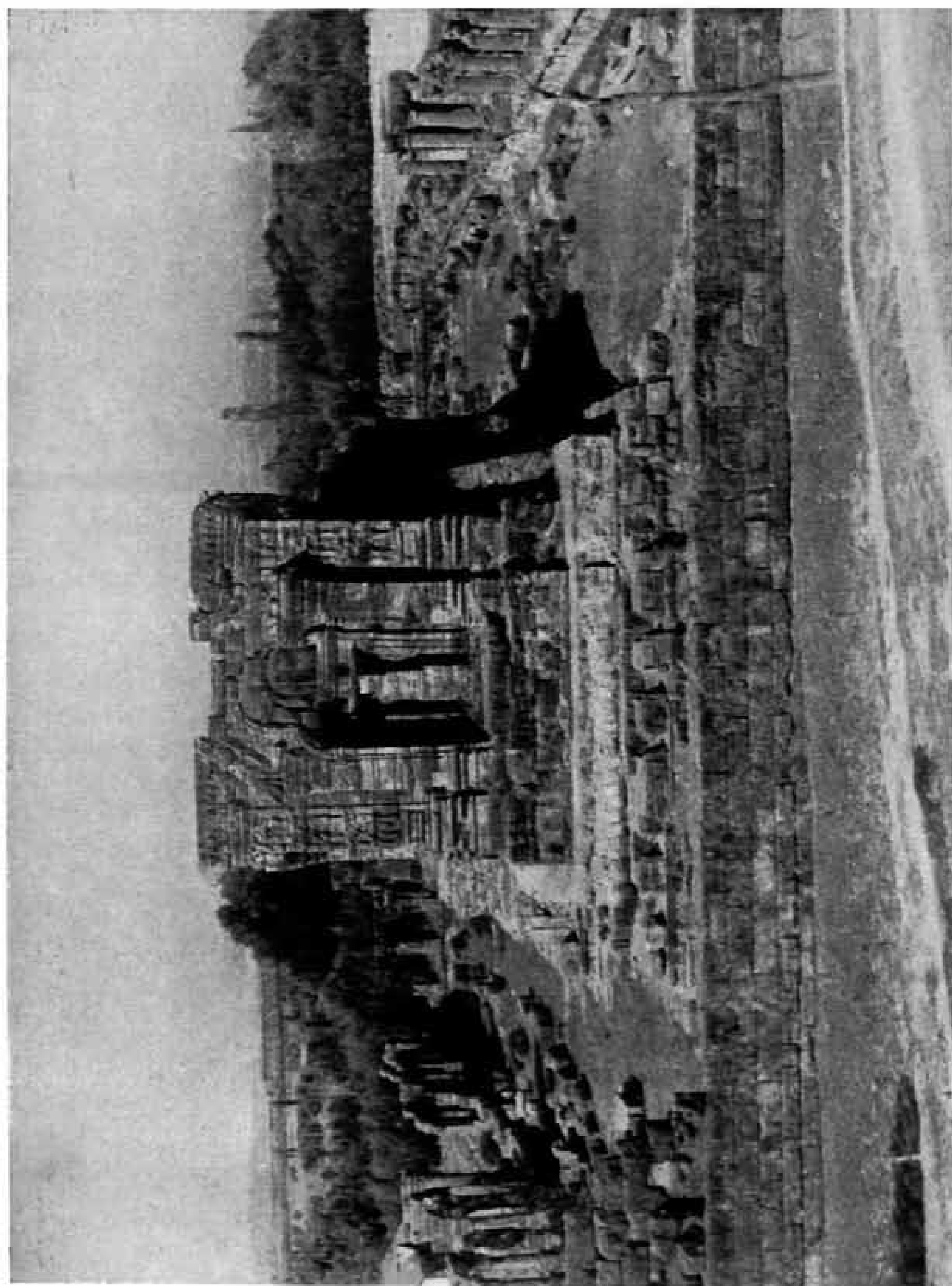


A



B

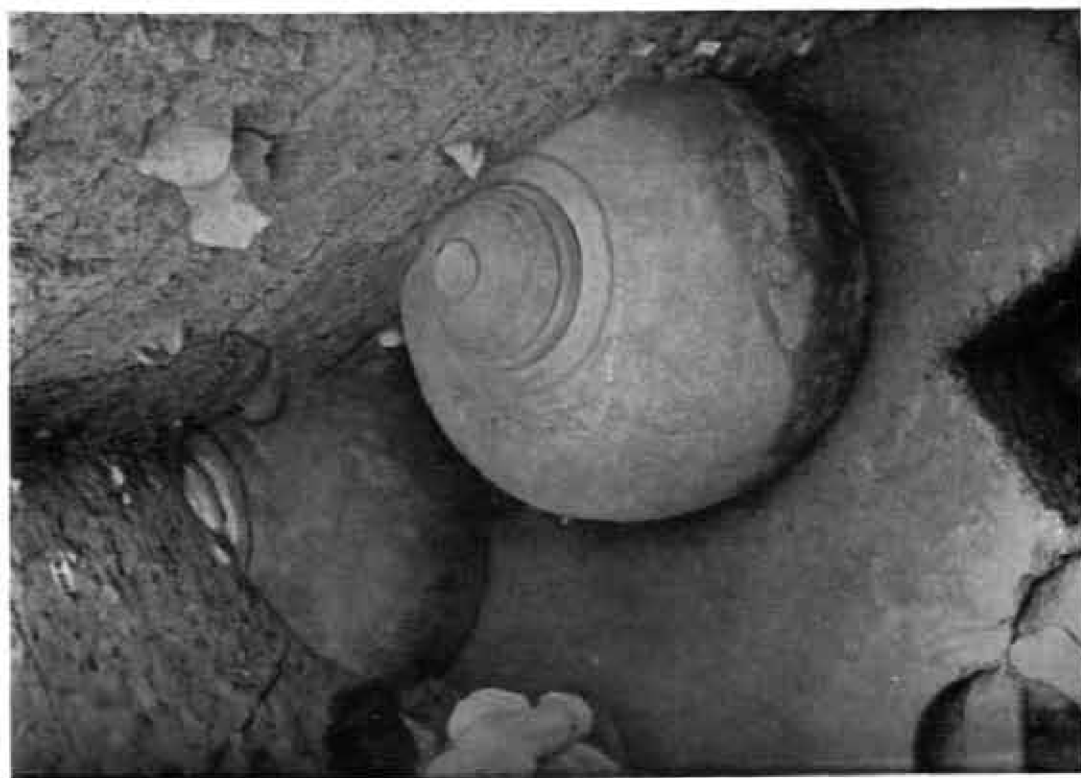
A: *Waztal, menhir;* B: *Brah, menhir.* *See p. 13*



Martand temple. See p. 13

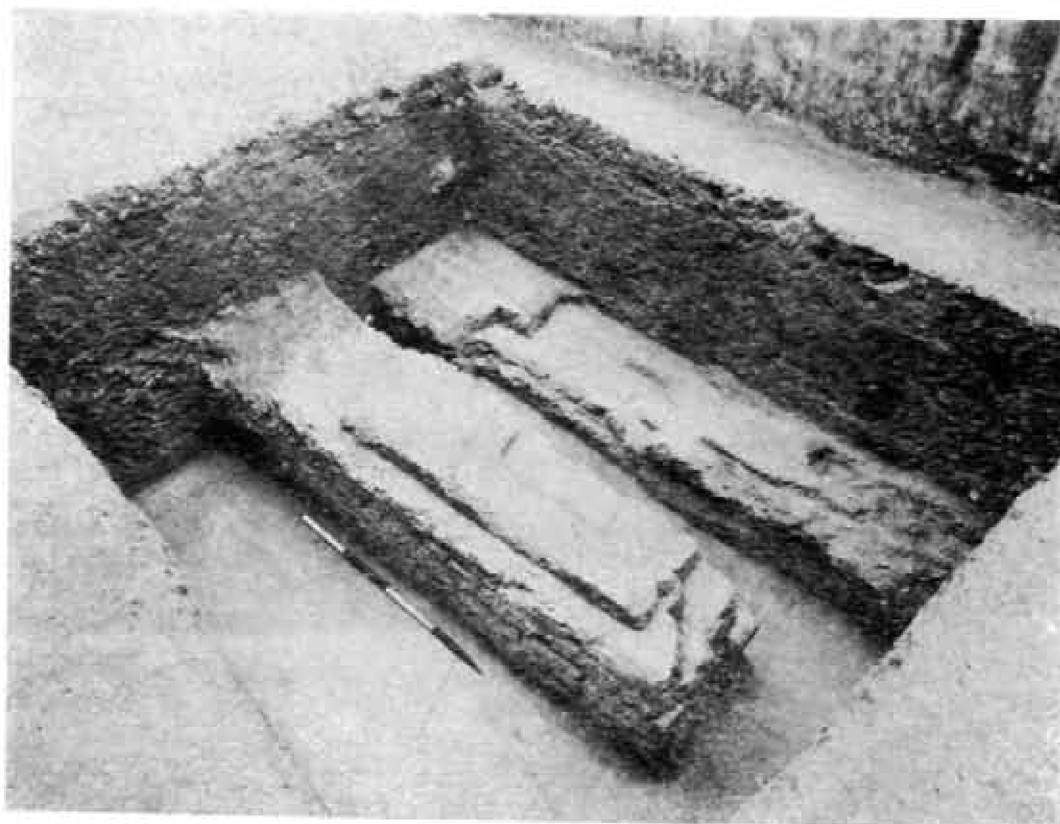


B



A

A. *Martand temple; storage jars;* B. *Waztal, menhir.* *See p. 13*

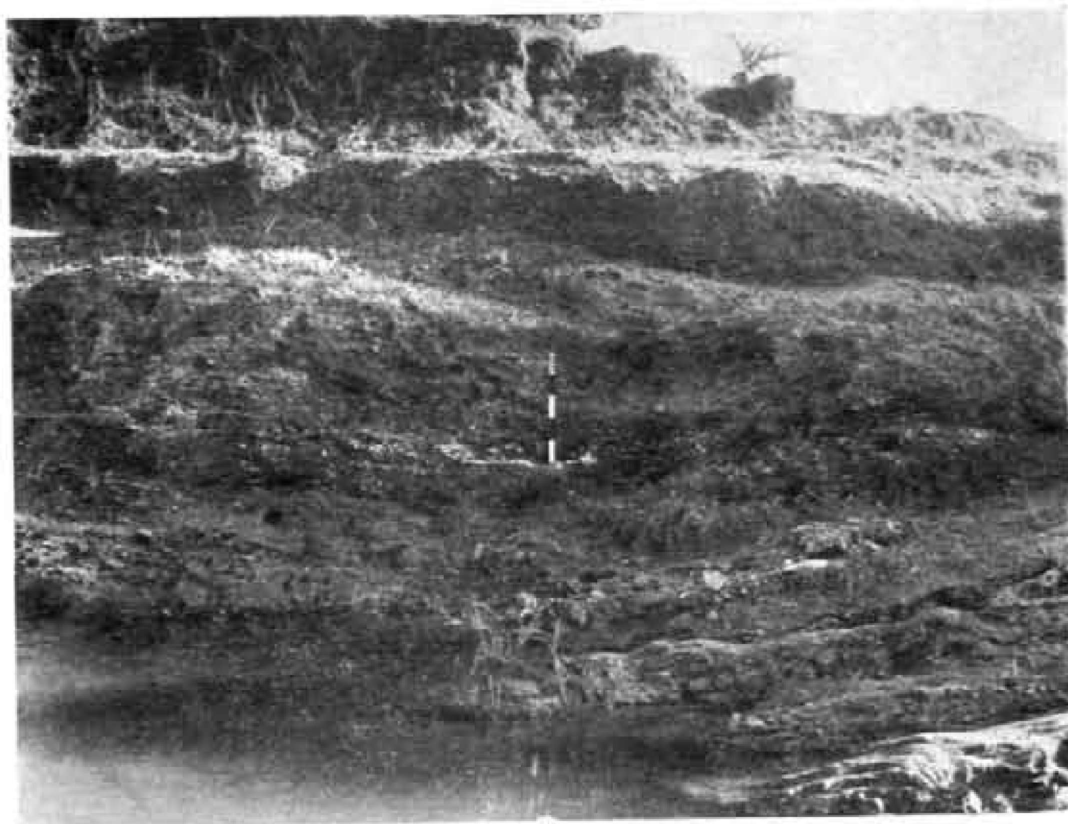


A

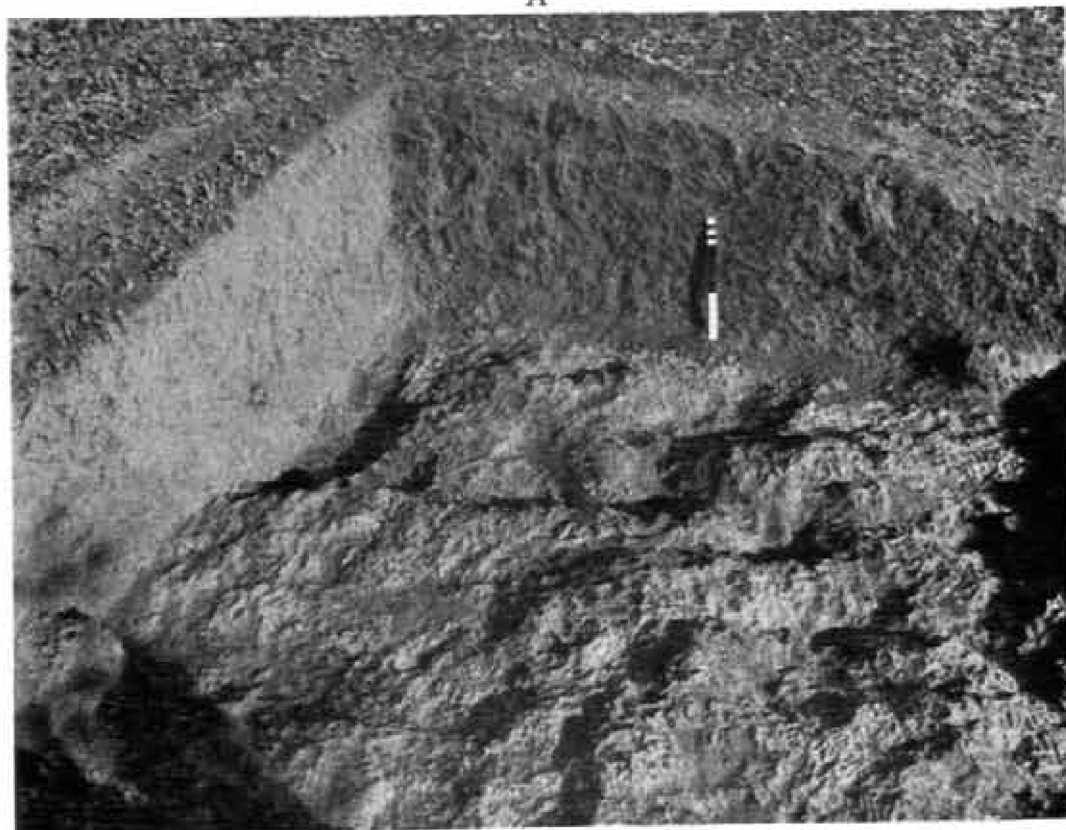


B

A, *Tirukkulasekharapuram, laterite walls;* B, *Madilakam, Chola coins.* *See p. 15*



A



B

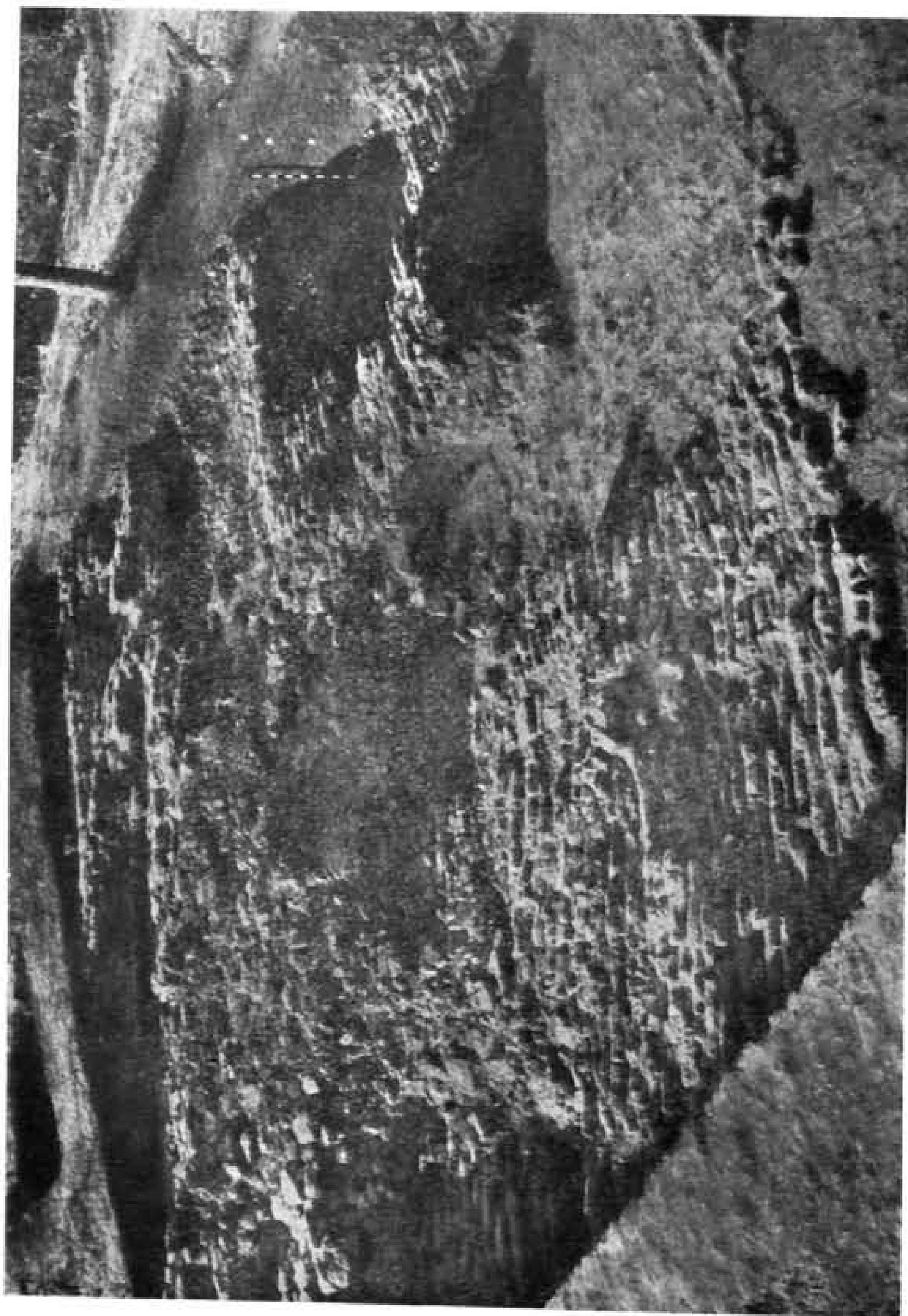
A, *Pauni, section of the right bank of the nullah;* B, *Shelari Maruti temple, lateritic clay-deposit,* *See p. 18.*



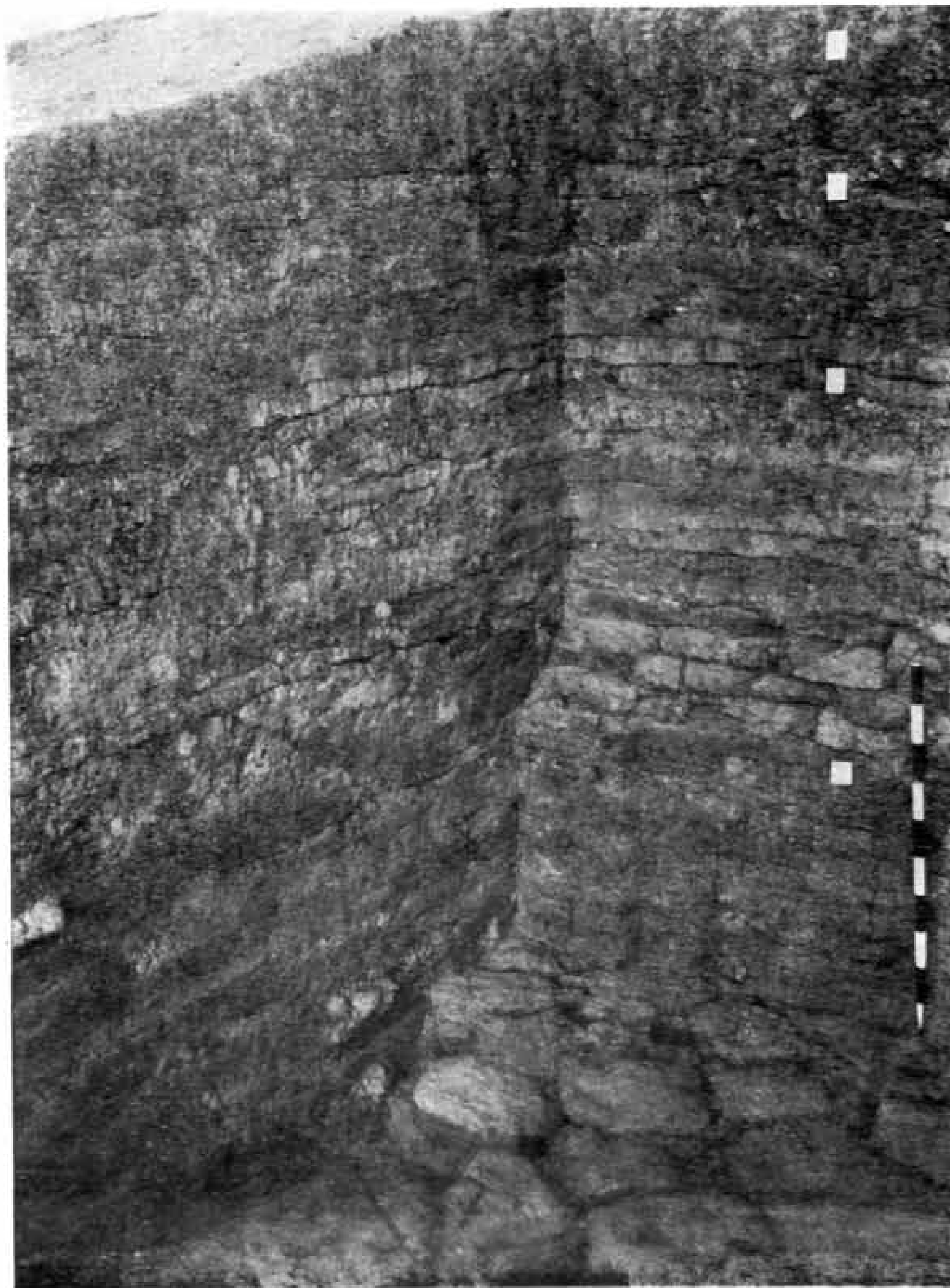
Pauni : general view of the stupa. *See p. 20*



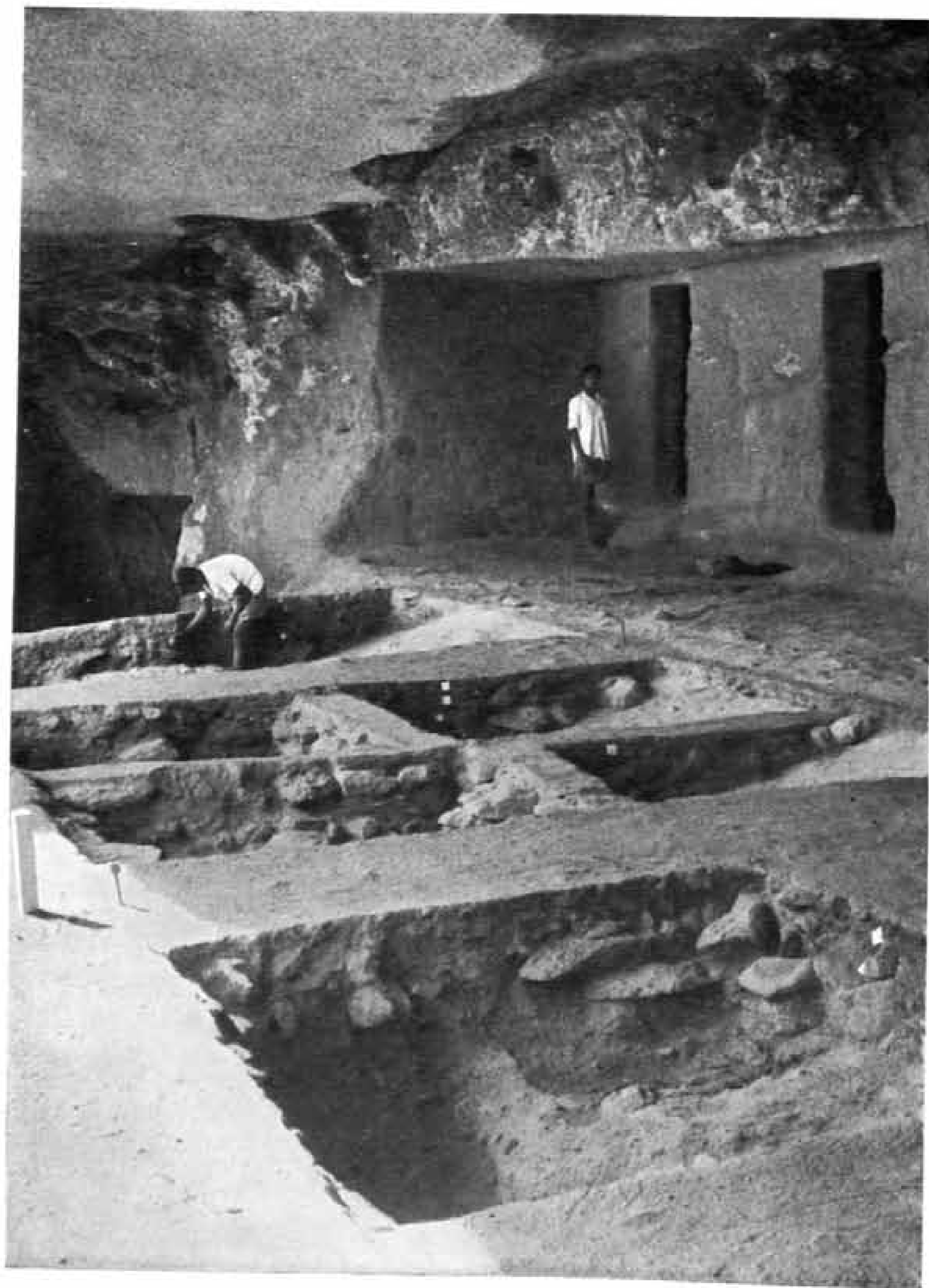
Pauni : tiered course of baked-bricks. *See p. 20*



Pauni: baked-brick revetment of the stupa. *See p. 21*



Pauni : Clay foundation of the stupa. *See p. 20*



Kanheri : general view of the trench in Cave No. 25. See p. 21



A



B

Kanheri : A, *flight of rock-cut steps;* B, *a furnace.* *See p. 22*



A

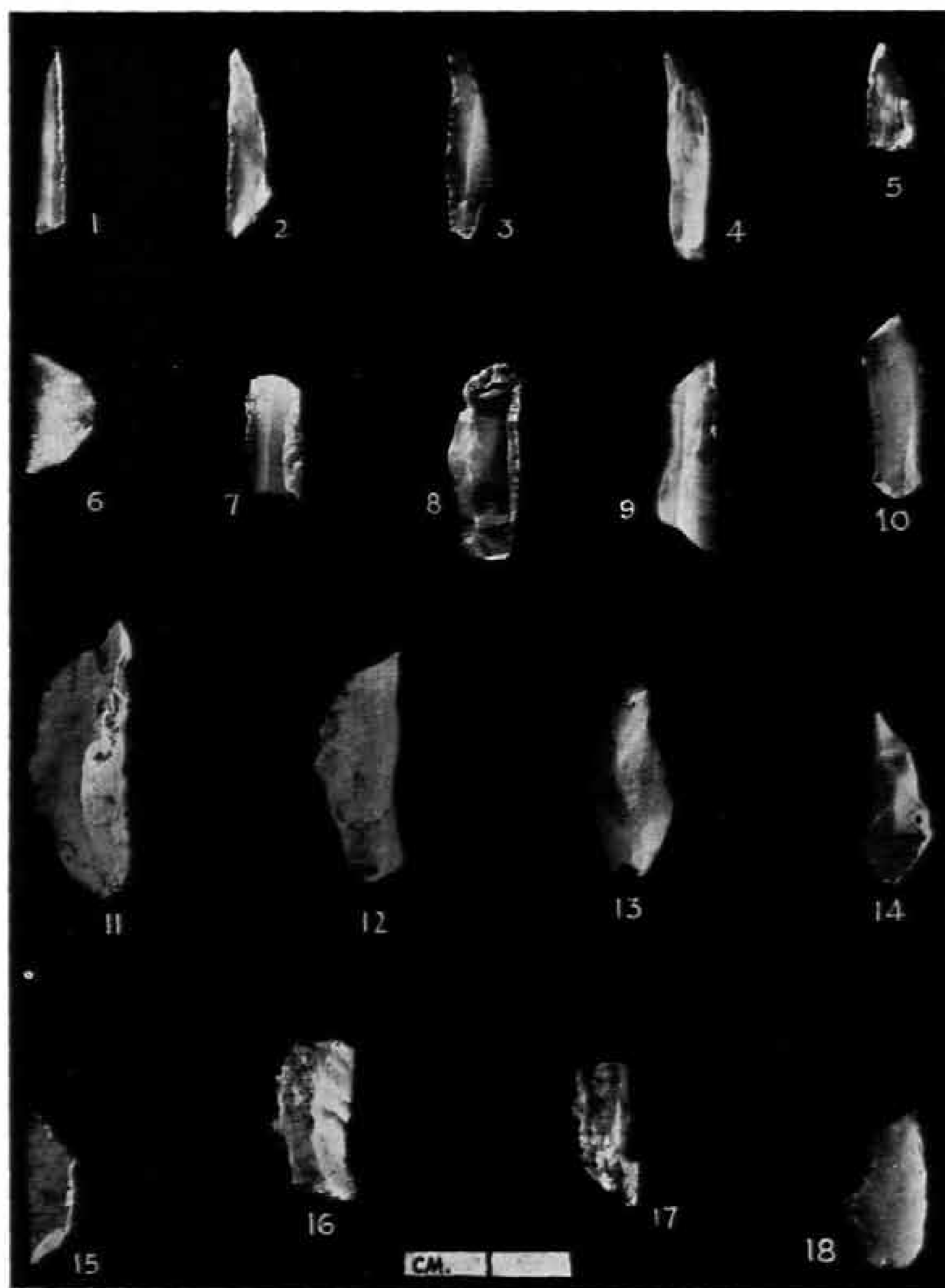


B

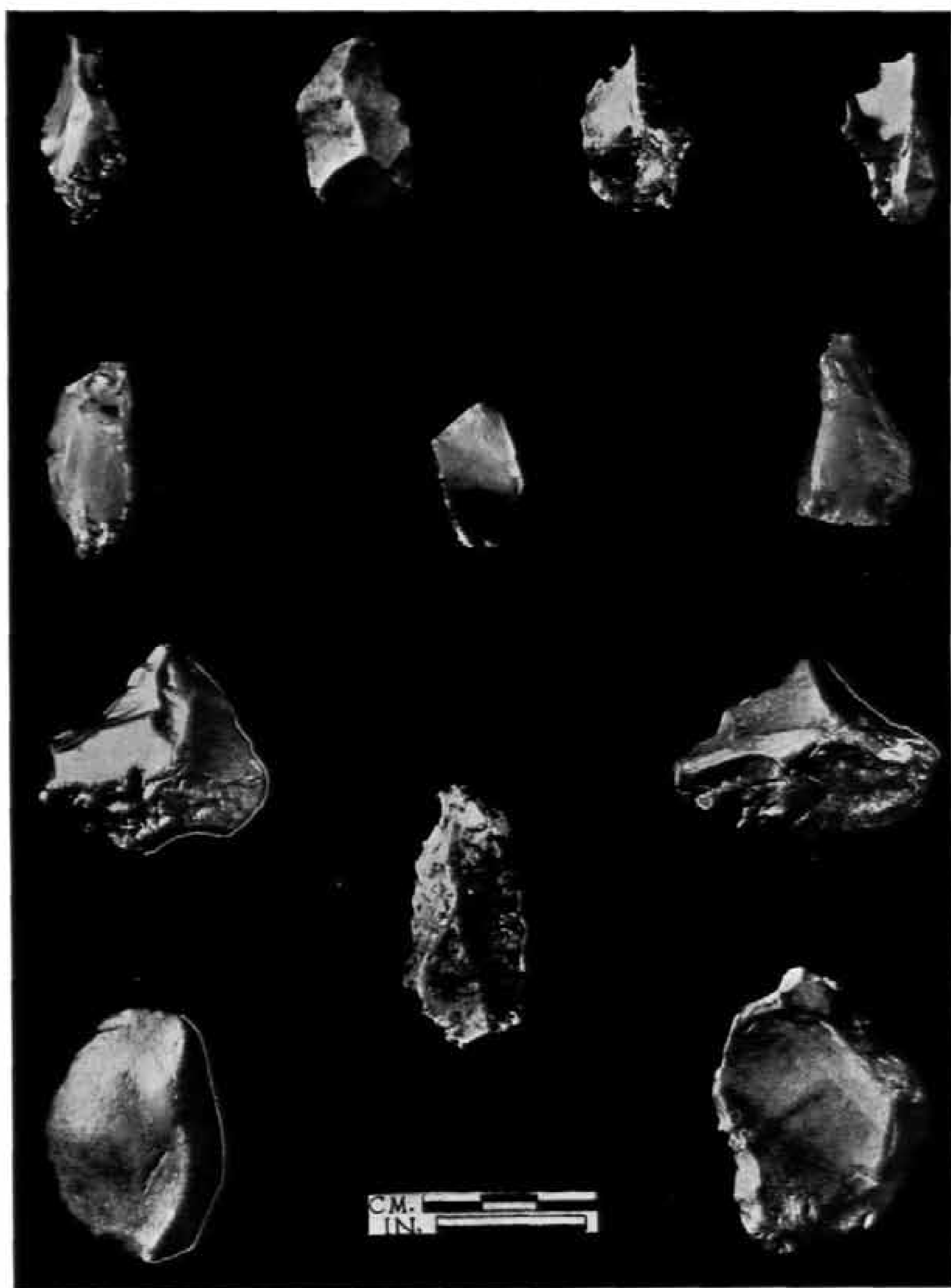
Kanheri : A, *inscribed potsherd*; B, *clay sealings*. *See p. 22*



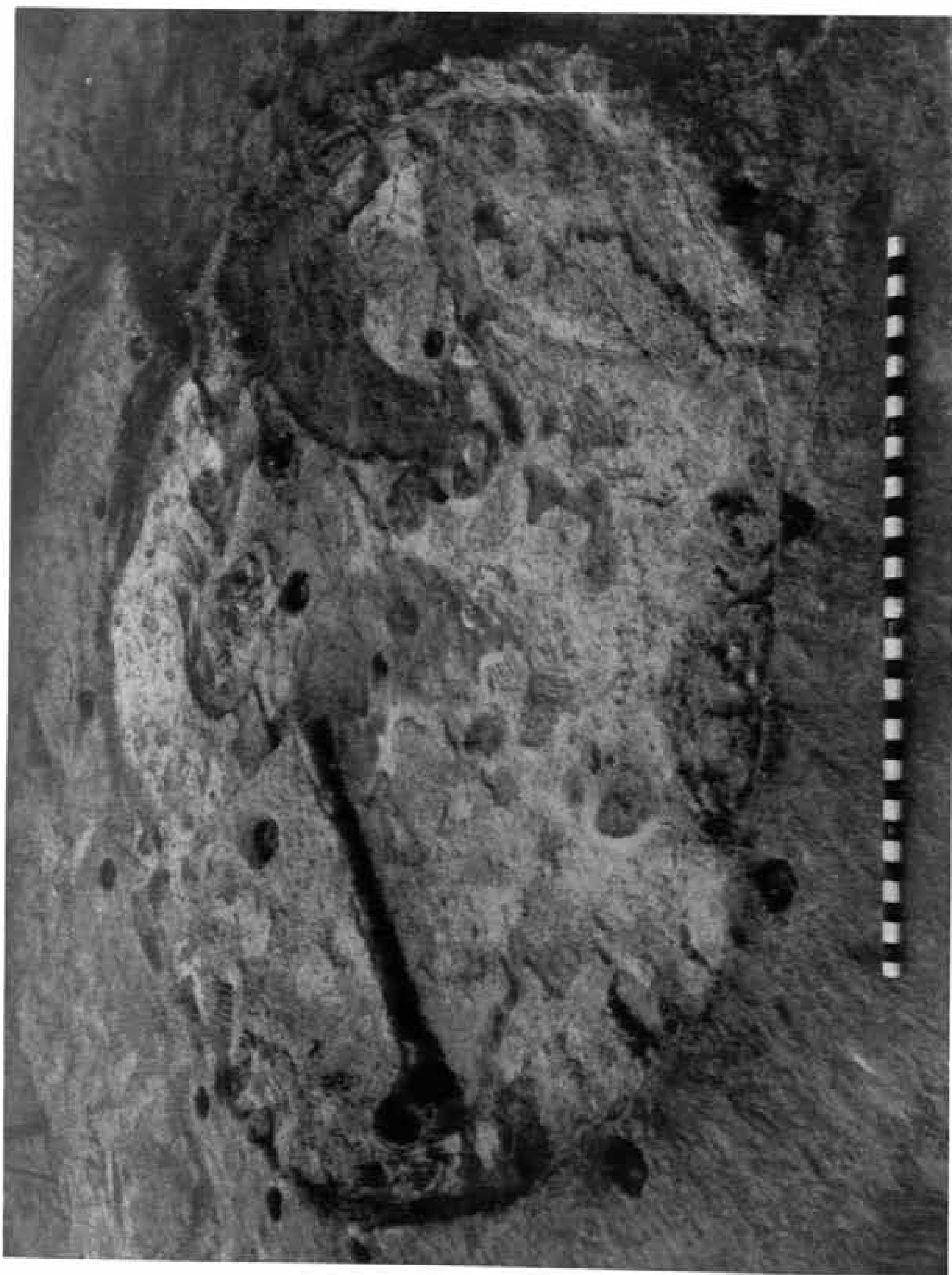
Pachad : natural cave with the trench in the foreground. See p. 23



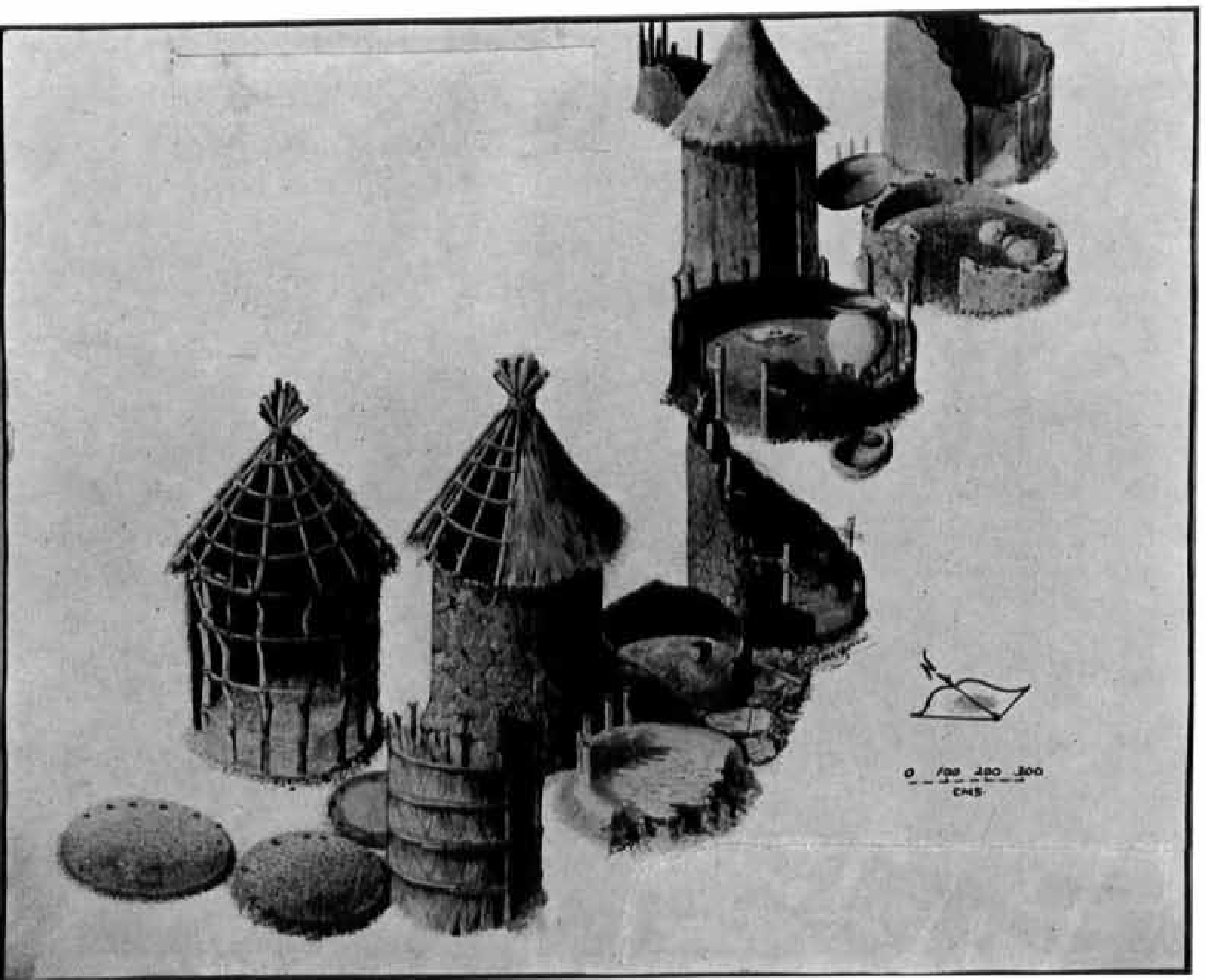
1-10, microliths from Pachad, and 11-18, microliths from cave-site near Hathkmba. See pp. 23 and 29



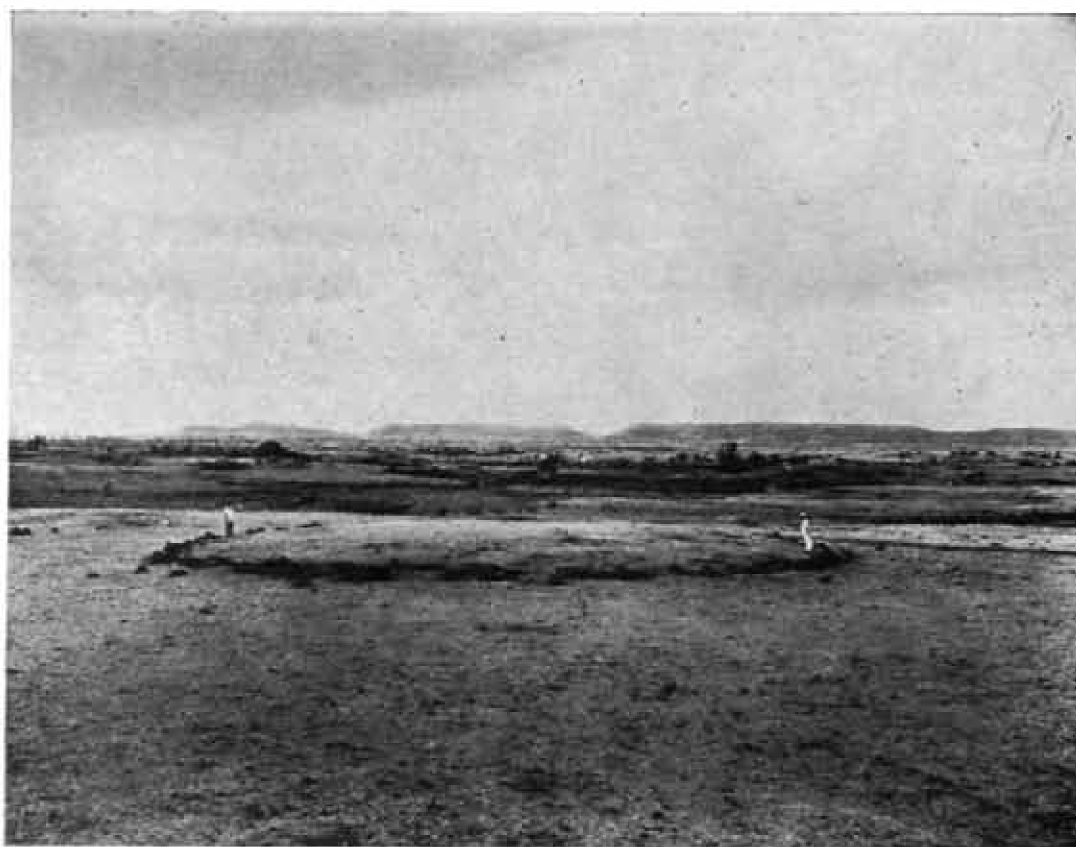
Middle Stone Age tools from the Pench river. *See p. 24*



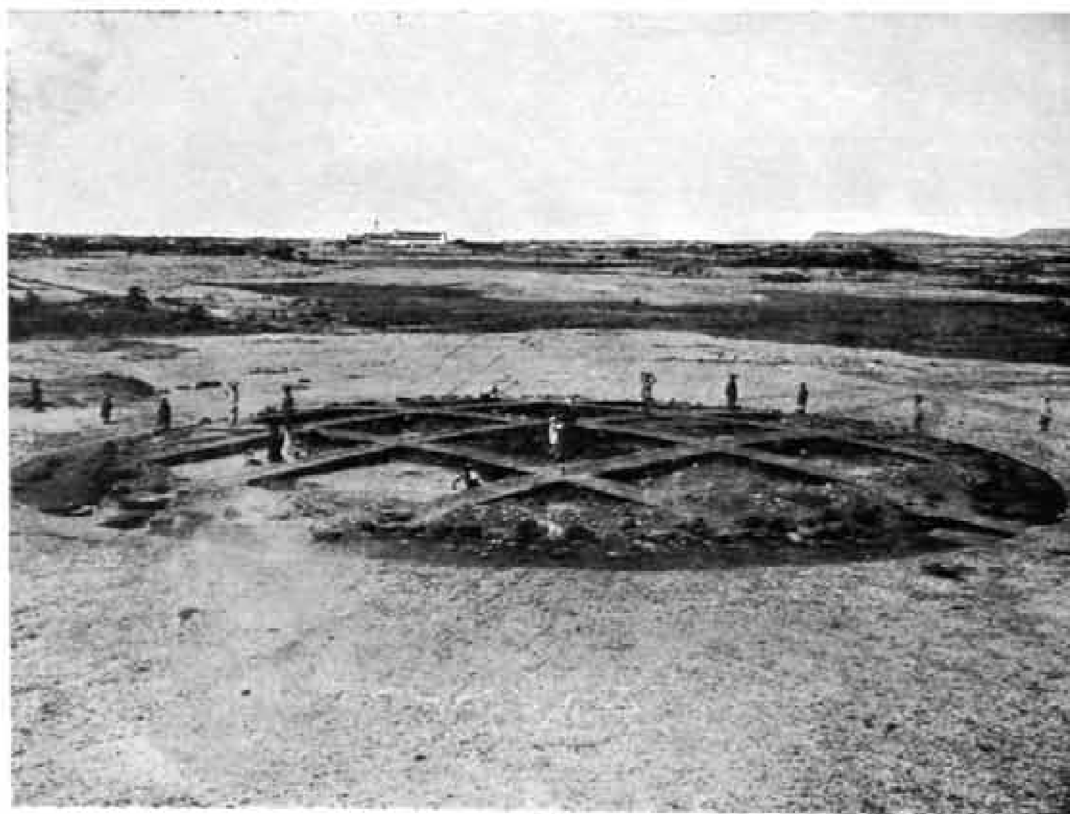
Inamgaon : plan of a circular house. *See p. 25*



Inamgaon : isometric reconstruction of houses. *See p. 25*



A



B

Theur : stone-circle, A, *before, and* B, *during excavation.* *See pp. 27 and 28*

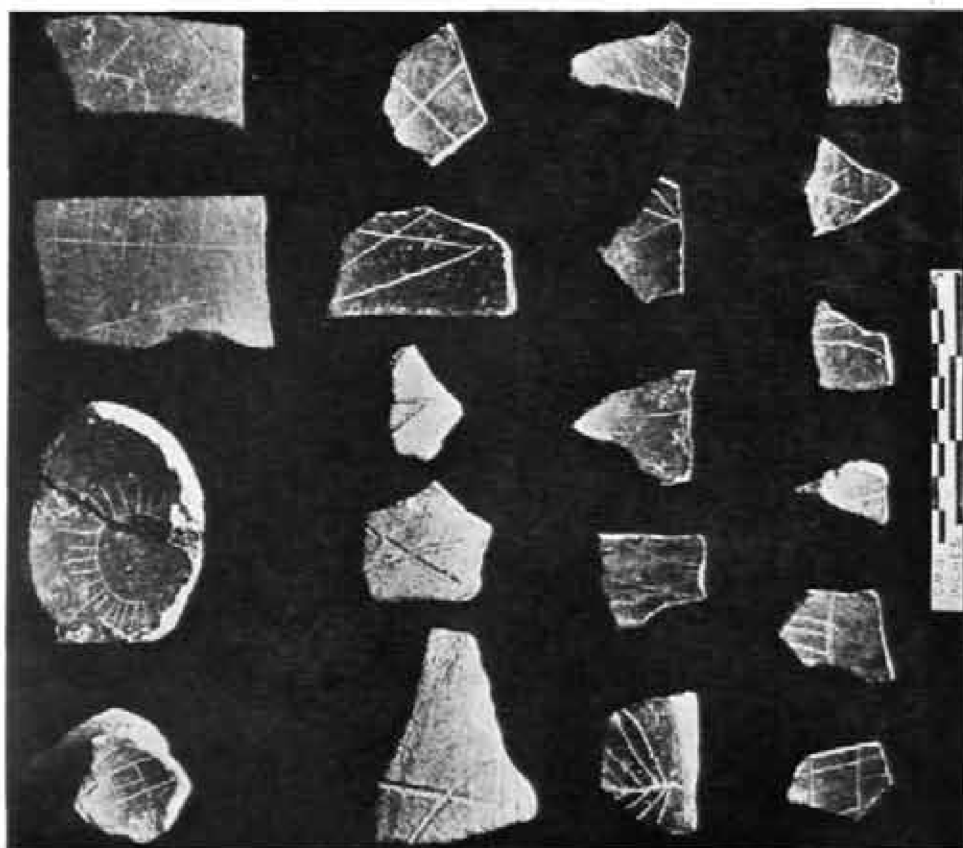


A



B

Theur : A, *rectangular plan of a house;* B, *remains of storage-bins.* *See p. 28*

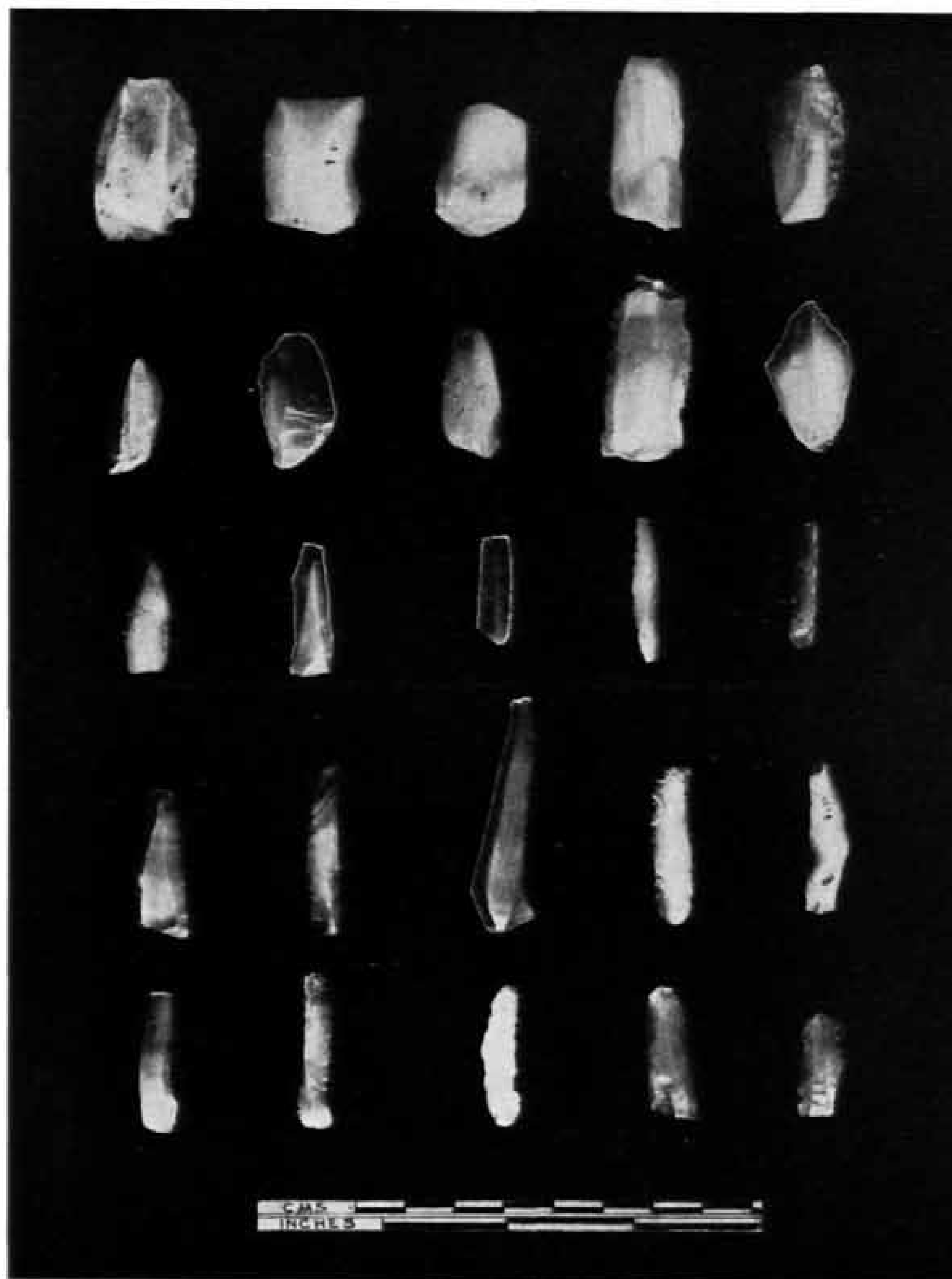


B

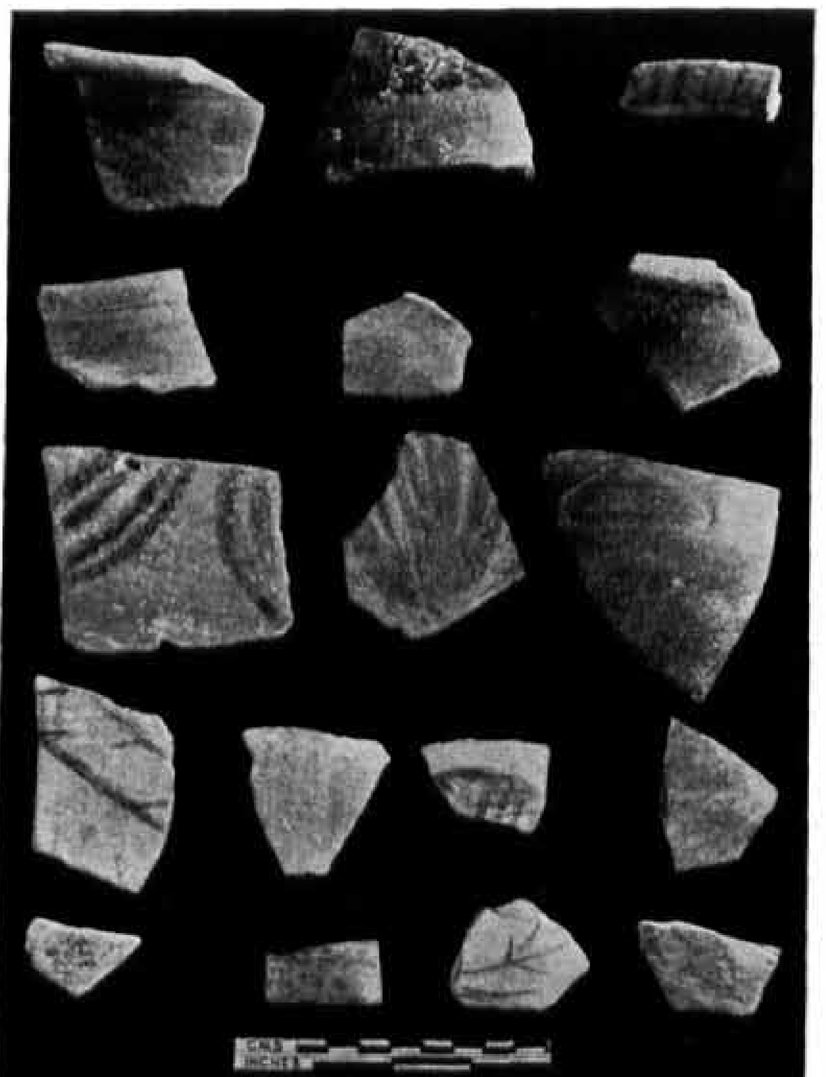


A

Theur : A, *double-pot burial;* B, *potsherds bearing graffiti.* *See p. 28*



Theur : cores, flakes and parallel-sided blades. *See p. 28*



A

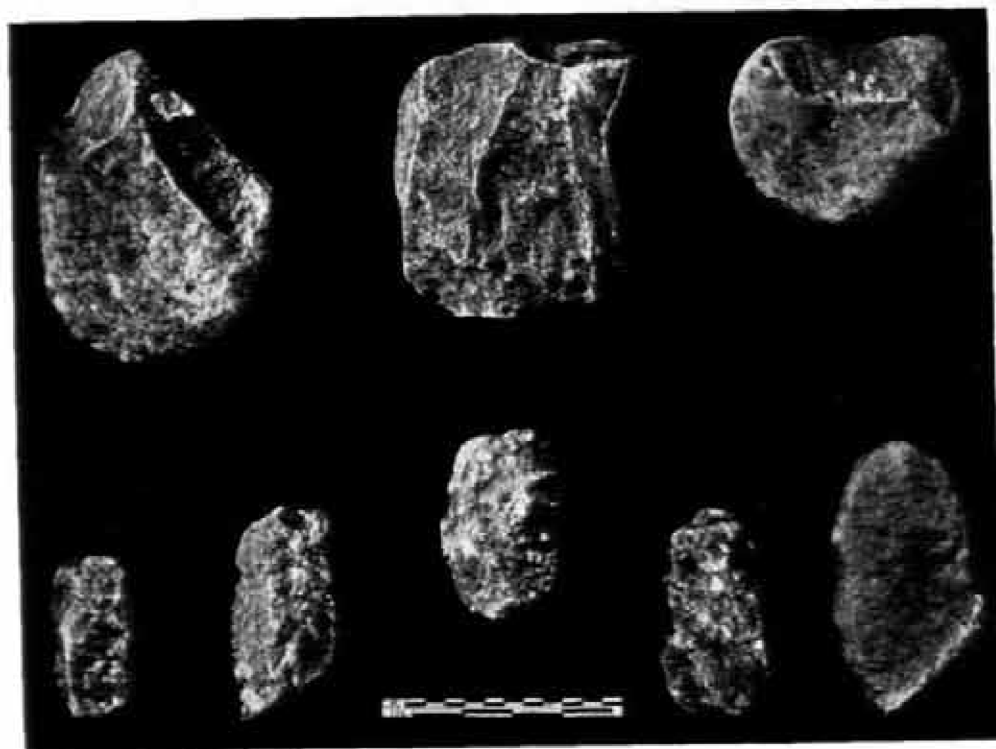


B

Theur : painted designs on pottery. See p. 28

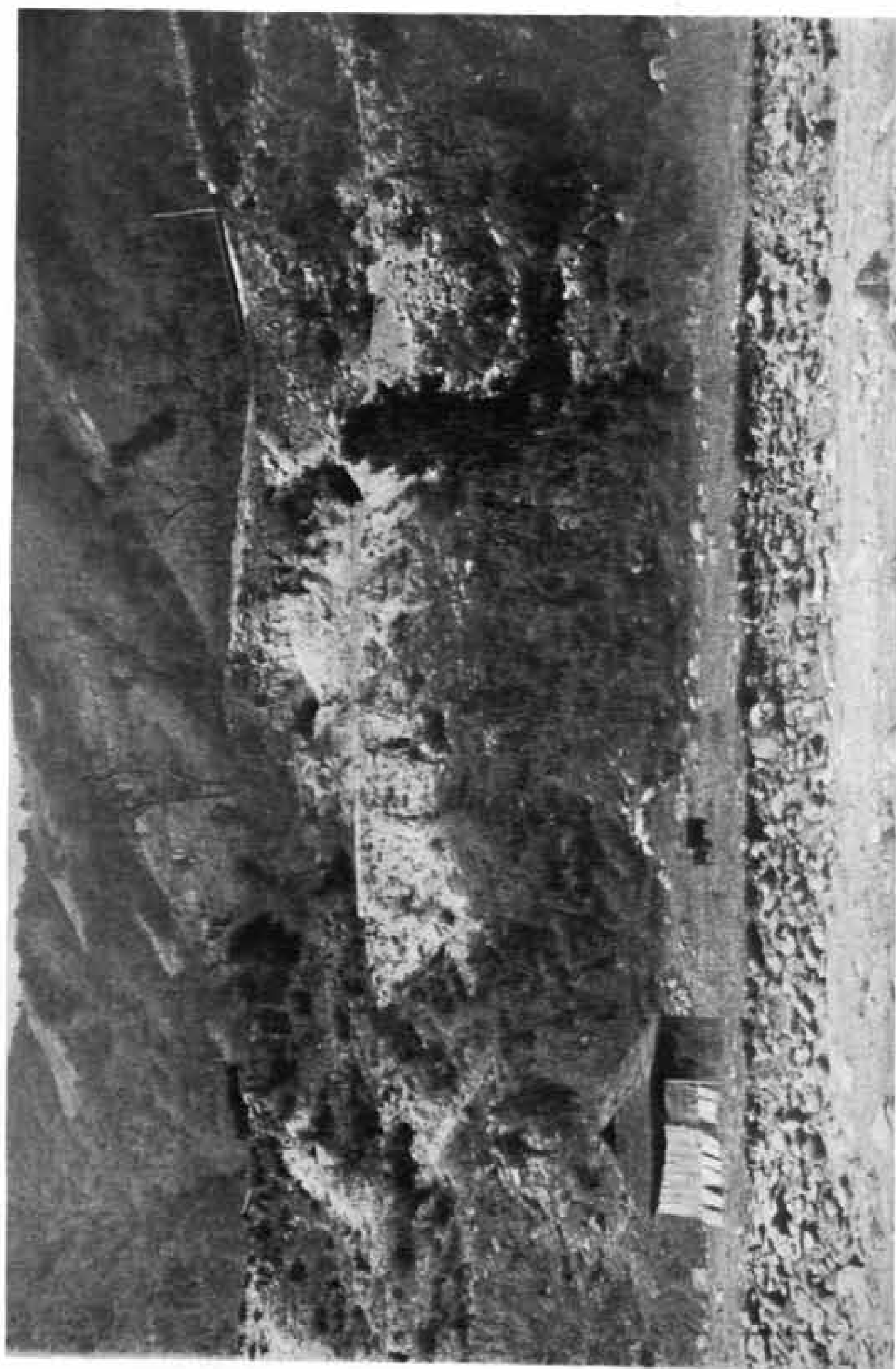


A

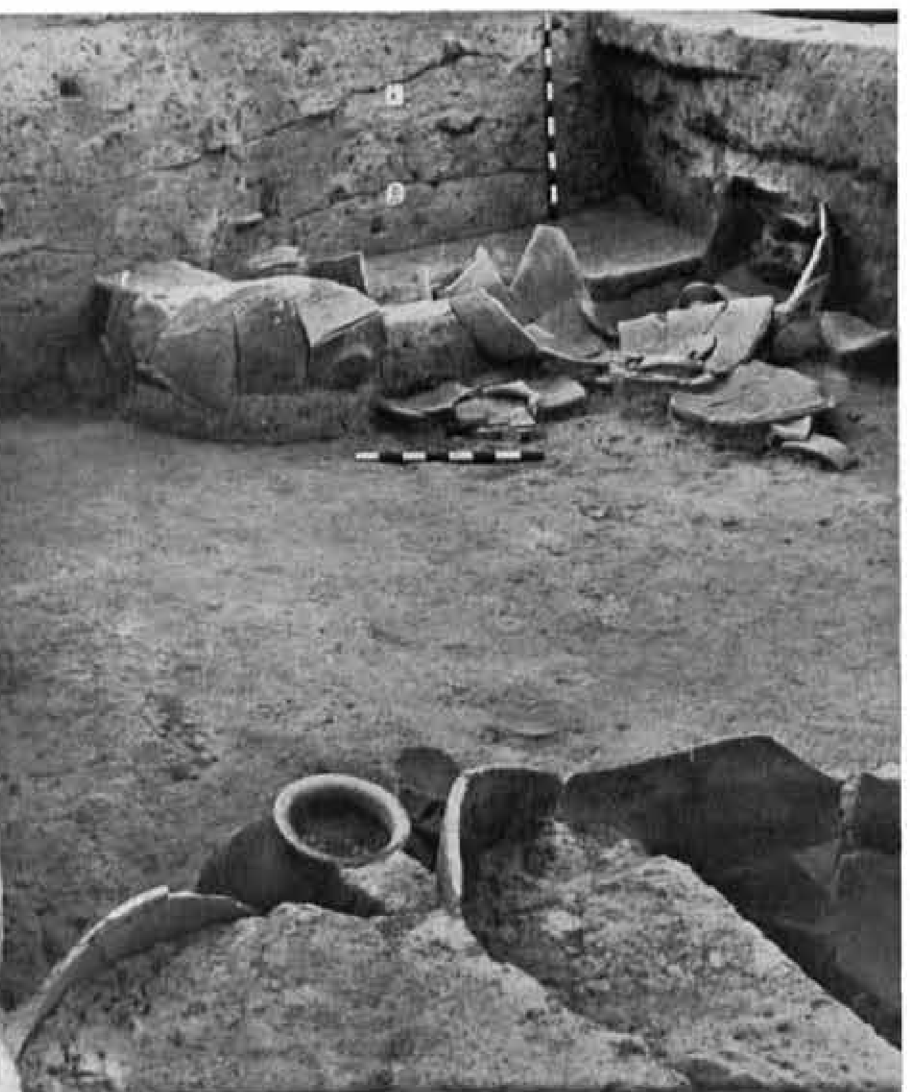


B

District Lohit : Old and New Stone Age tools. *See p. 30*



Hayuliang, District Lohit : section of the high-level terraces. *See p. 30*



A



B

Sanghol: A, *storage-jars, Period I*; B, *mud rampart, Period IV*. *See pp. 31 and 32*



A



B

Sanghol : painted pottery, Period I. *See p. 32*



A

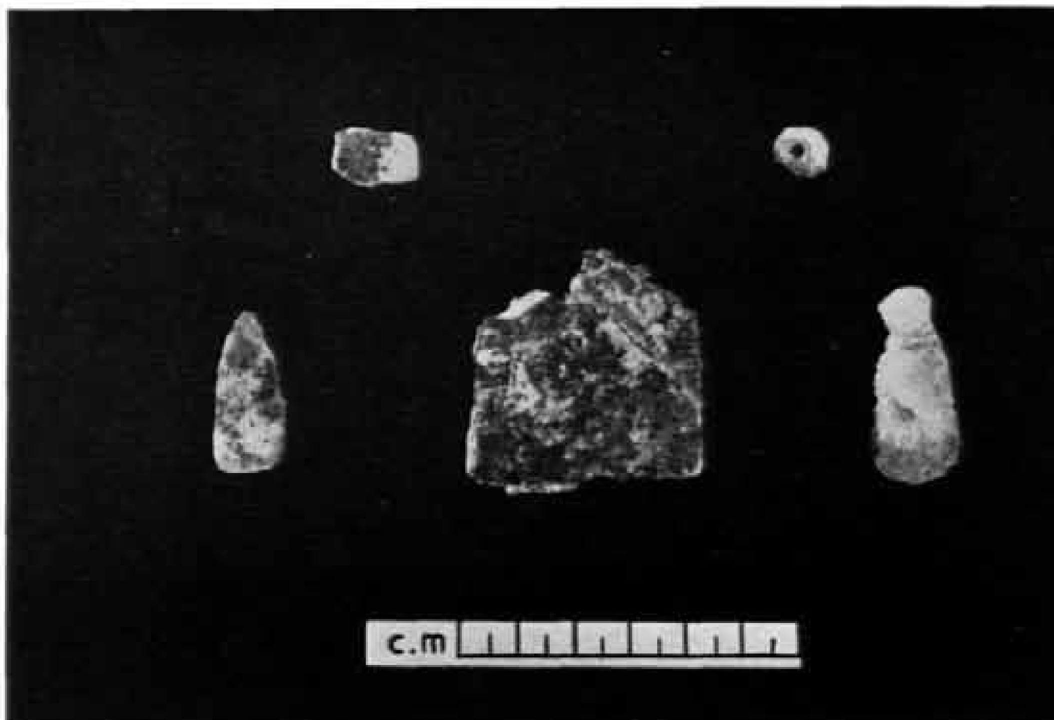


B

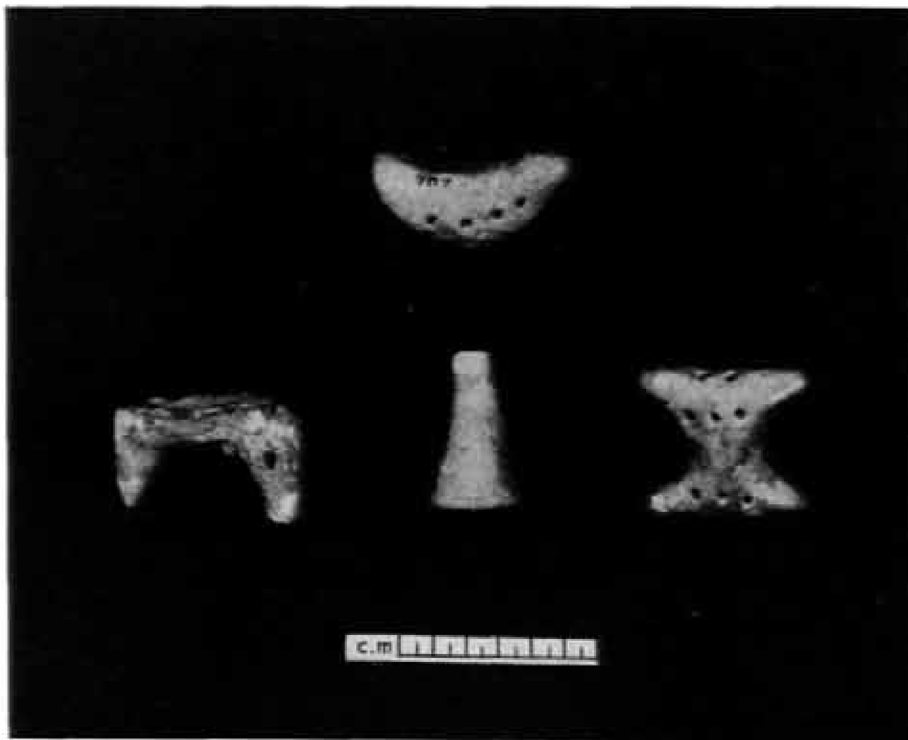


C

Bagor : A, *circular arrangement of stones;* B, *hand-made ovoid pot;* C, *stones and fragmentary bones inside stone arrangement.* *See p. 33*



A



B

Lal Qila: A, *copper objects*; B, *terracotta objects*. *See p. 39*

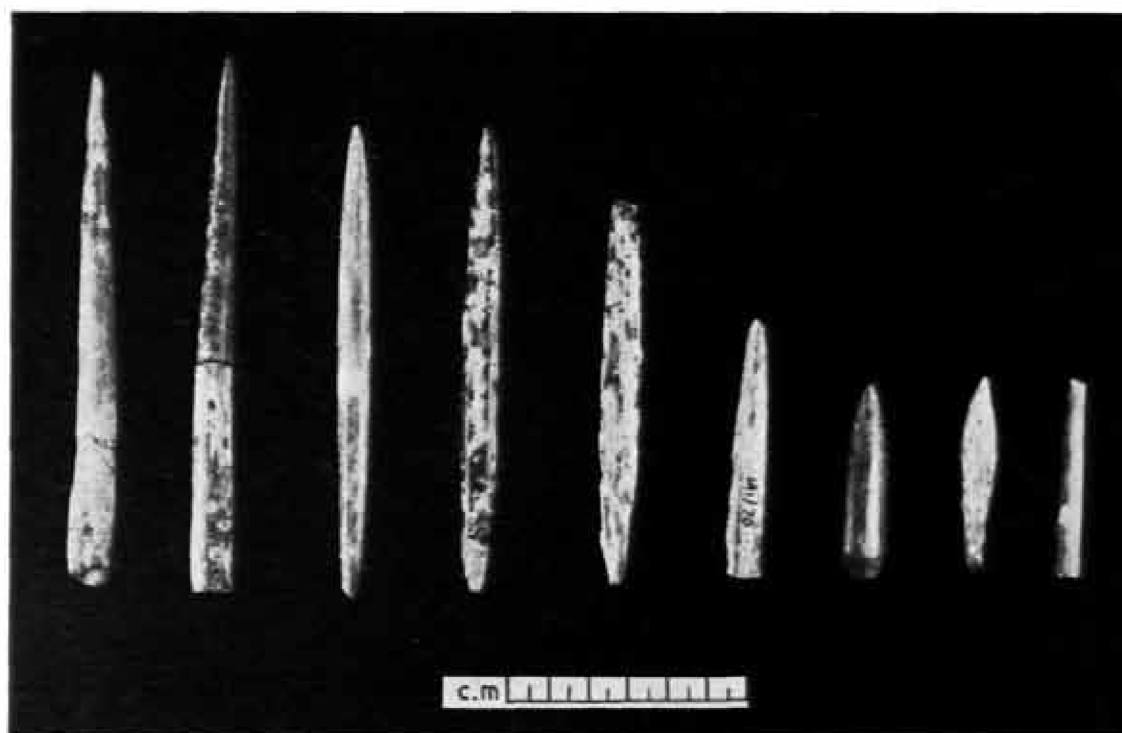


A

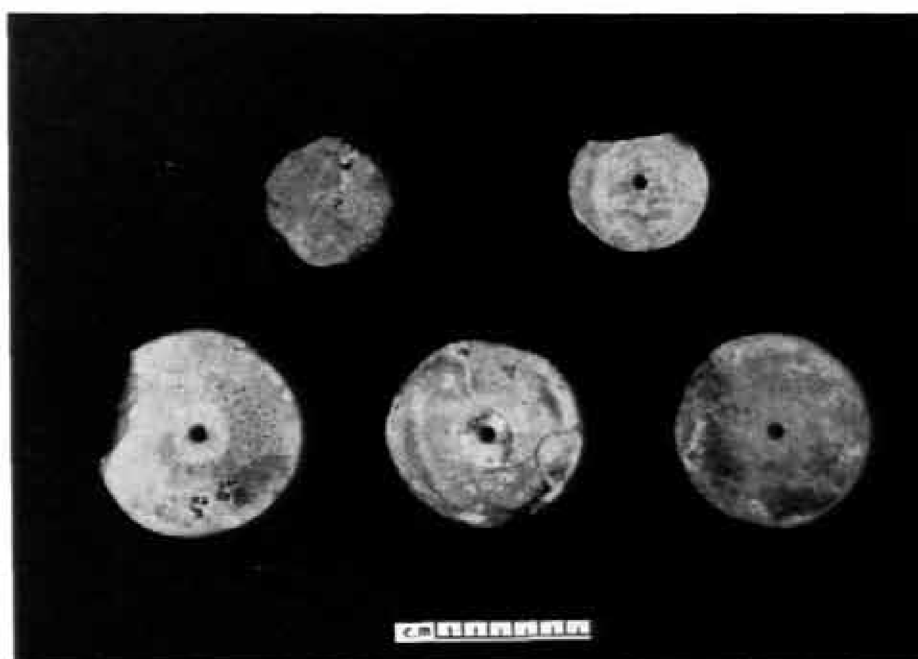


B

Lal Qila : A, *terracotta human figurine;* B, *terracotta and stone beads.* *See p. 39*



A



B

Lal Qila : A, *bone implements;* B, *terracotta wheels.* *See p. 39*



A

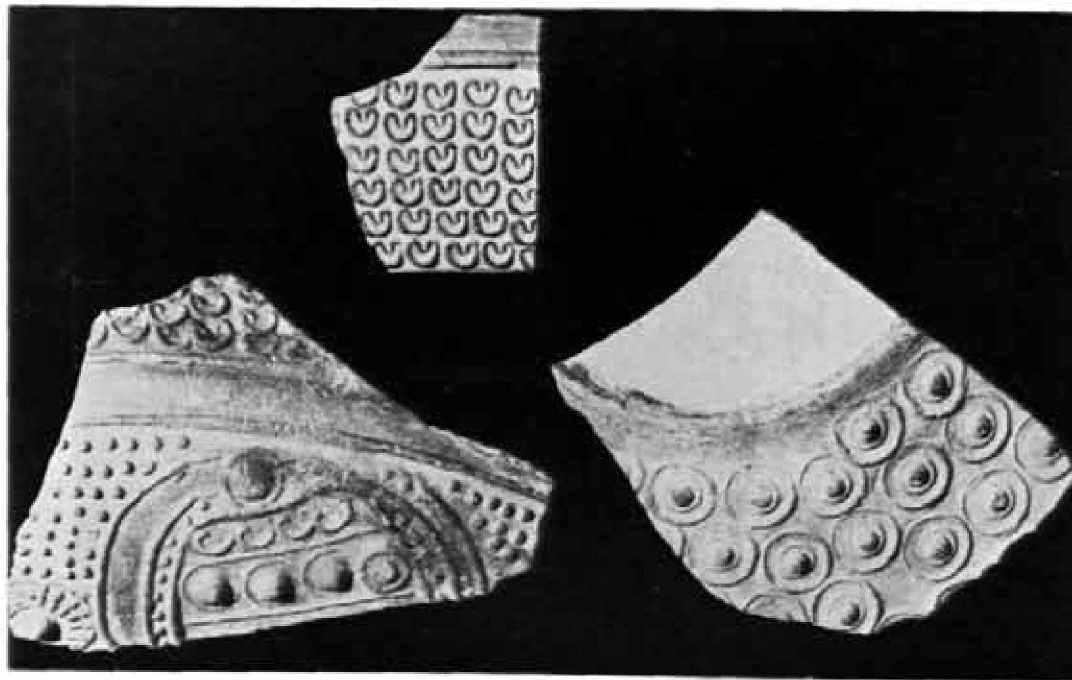


B

Sonkh : A, *stone-plaque of Vishnu;* B, *matrika.* *See p. 42*

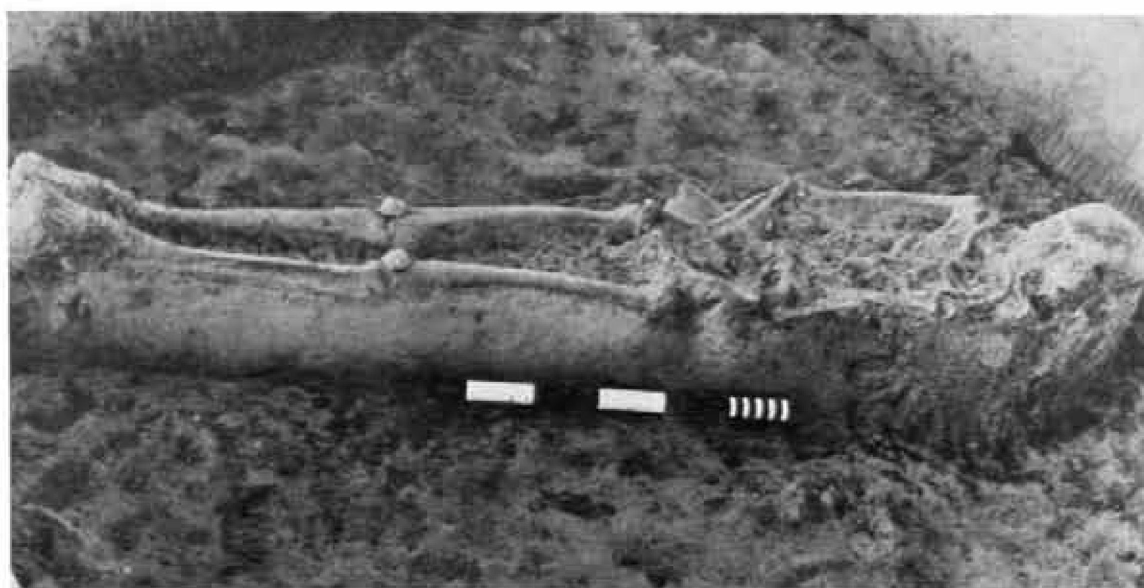


A



B

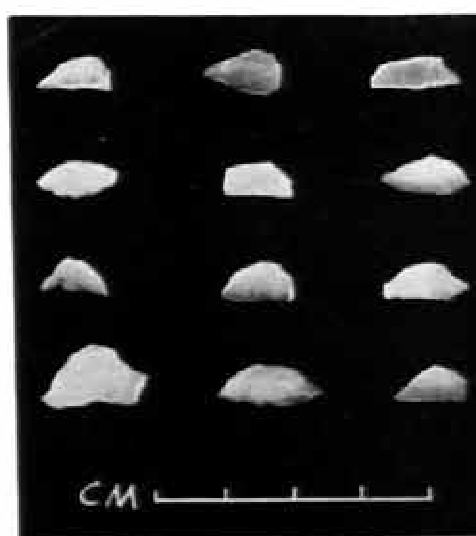
Sonkh: A, *bronze image of deities*; B, *moulded pottery*. See p. 42



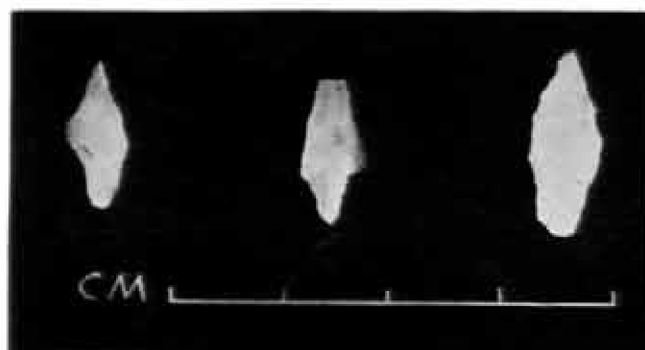
A



B



C



D

Sarai Nahar Rai : A, *extended burial;* B-D, *Late Stone Age tools.* *See pp. 43 and 44*



Indukurupalle: hero-stone inscription. *See p. 45*



A



B



C

A: *Kathora, inscription of Ghiyathu'd-Din Tughluq Shah;* B: *Kara, inscription of Qutbud-Din Aibek;* C, *Allahabad Museum, Khalji inscription.* *See pp. 51 and 54*



A



B

Budhi Chanderi: images of, A, *Surya, and* B, *Ganesa.* *See p. 60*



A

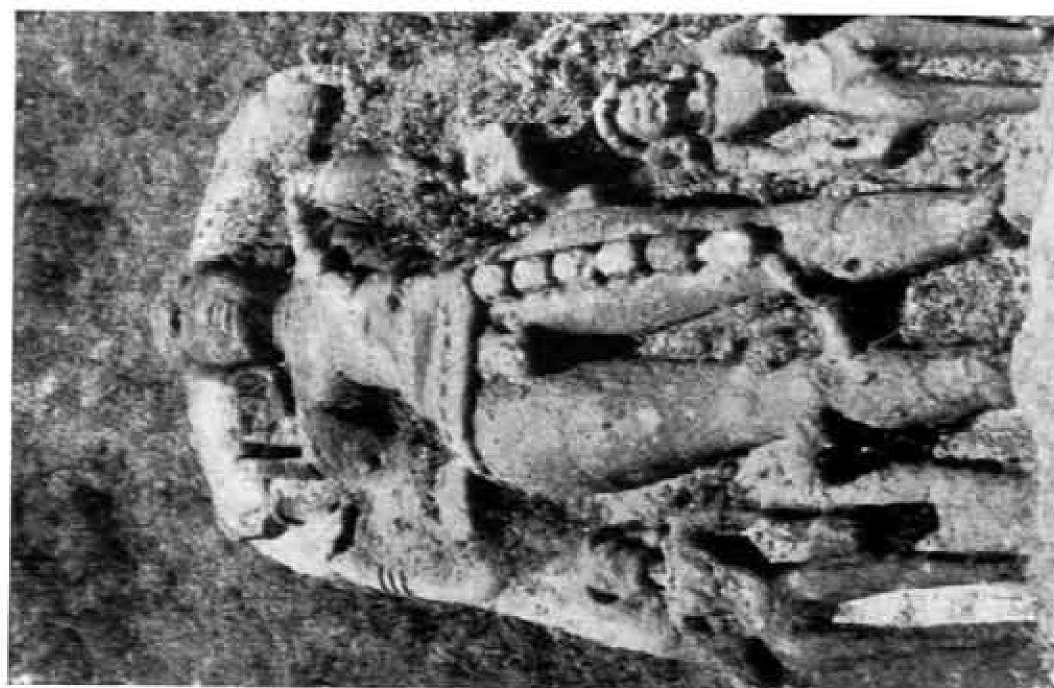


B

Budhi Chanderi : A, *Ardhanarisvara;* B, *figure of a dancer and musicians.* *See p. 60*



A

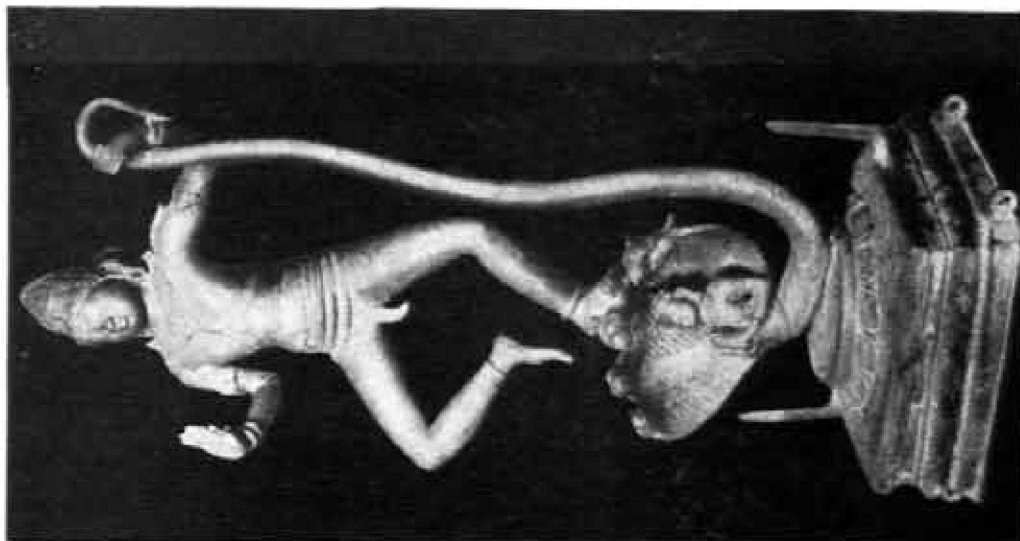


B

A, *Gangaikondacholapuram, image of Durga;* B, *Chengamedu, image of Siva as Bhairava.* *See p. 61*



Chandradhari Museum, Darbhanga: Vishnu. *See p. 72*

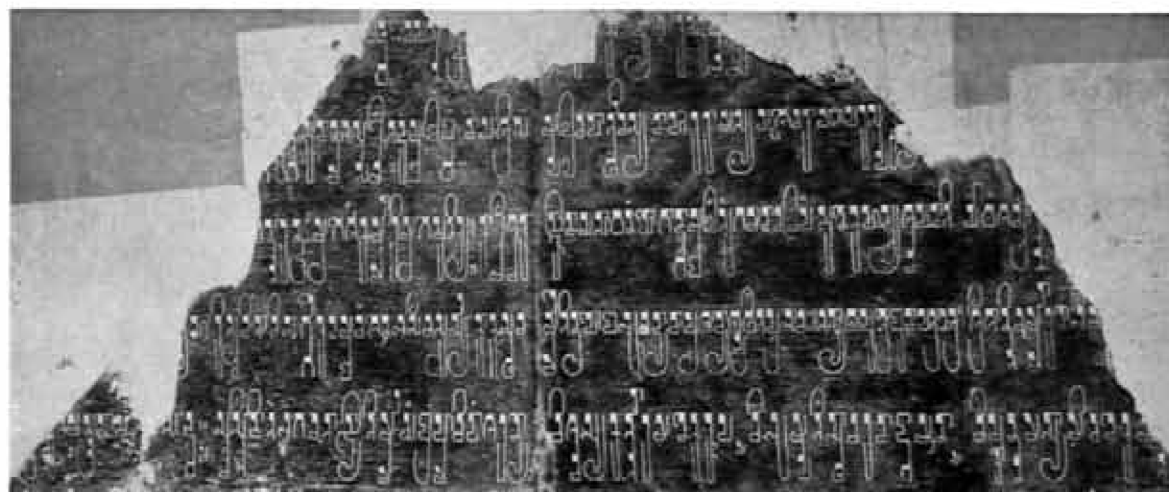


B



A

National Museum, New Delhi : A, Vishnu; B, Kaliyadamana Krishna. *See p. 72*



A



B

Museum of Art and Archaeology, Dharwar: Kannada inscriptions. *See p. 73*



A



B

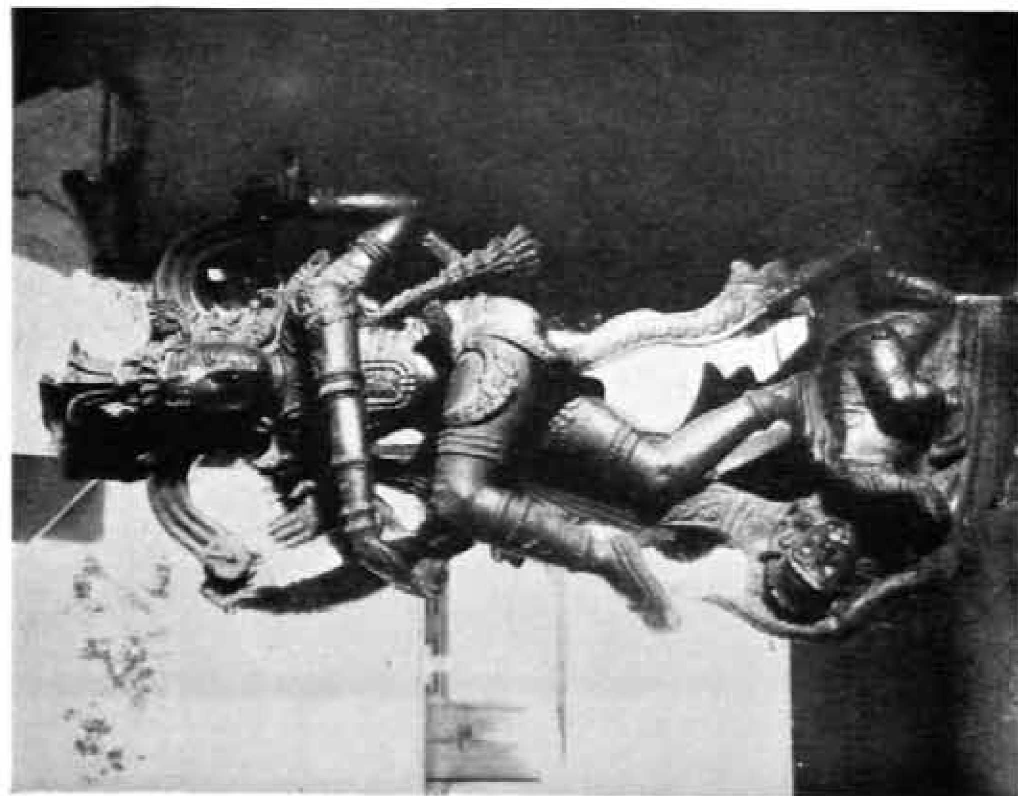


C

A *and* B: *Central Museum, Nagpur, nude-goddess sculptures;* C: *State Museum, Lucknow, animal-headed human figure.* *See pp. 74 and 75*



Patna Museum, Patna : crowned Buddha (?) under a tree. *See p. 75*

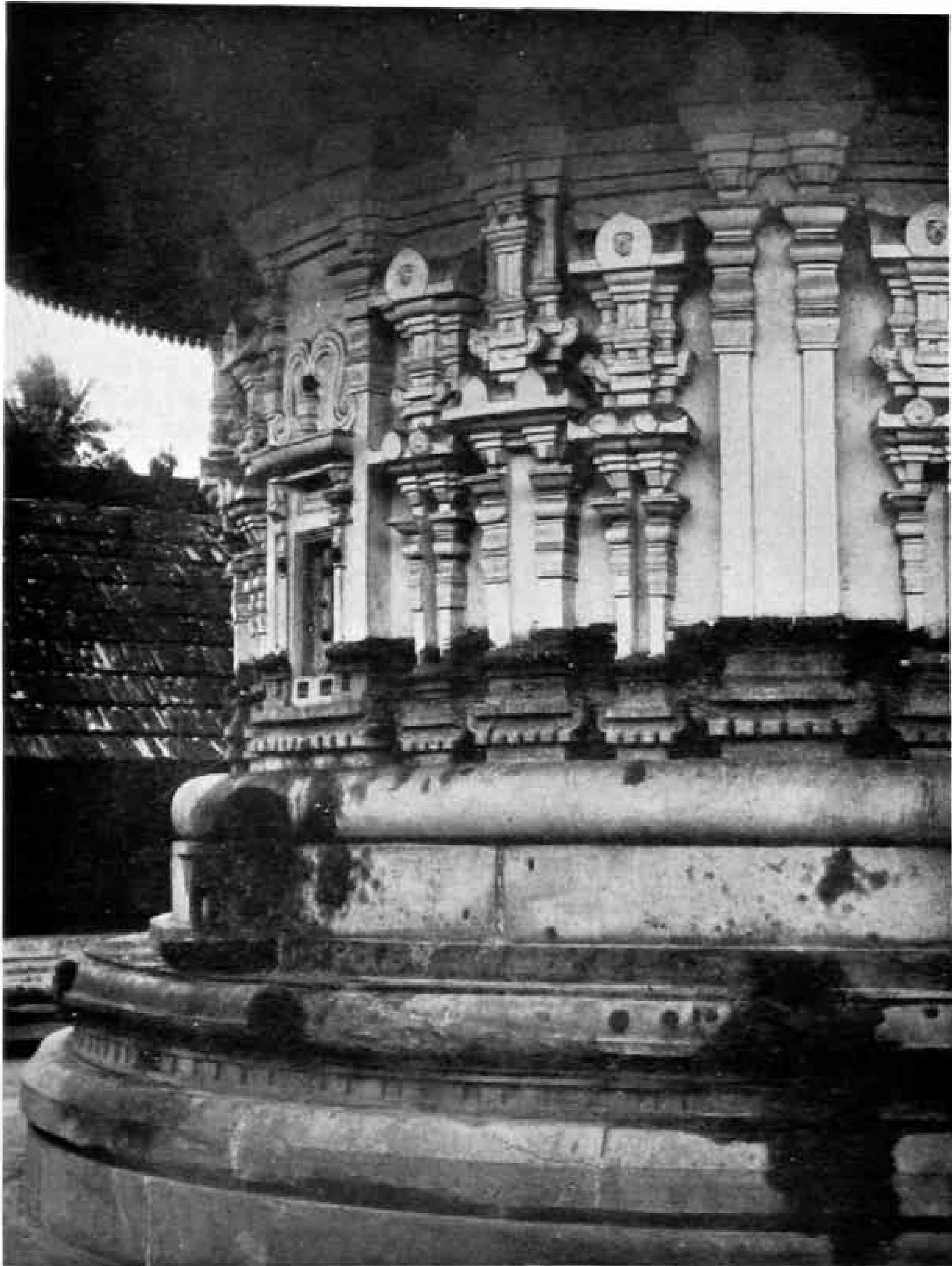


B

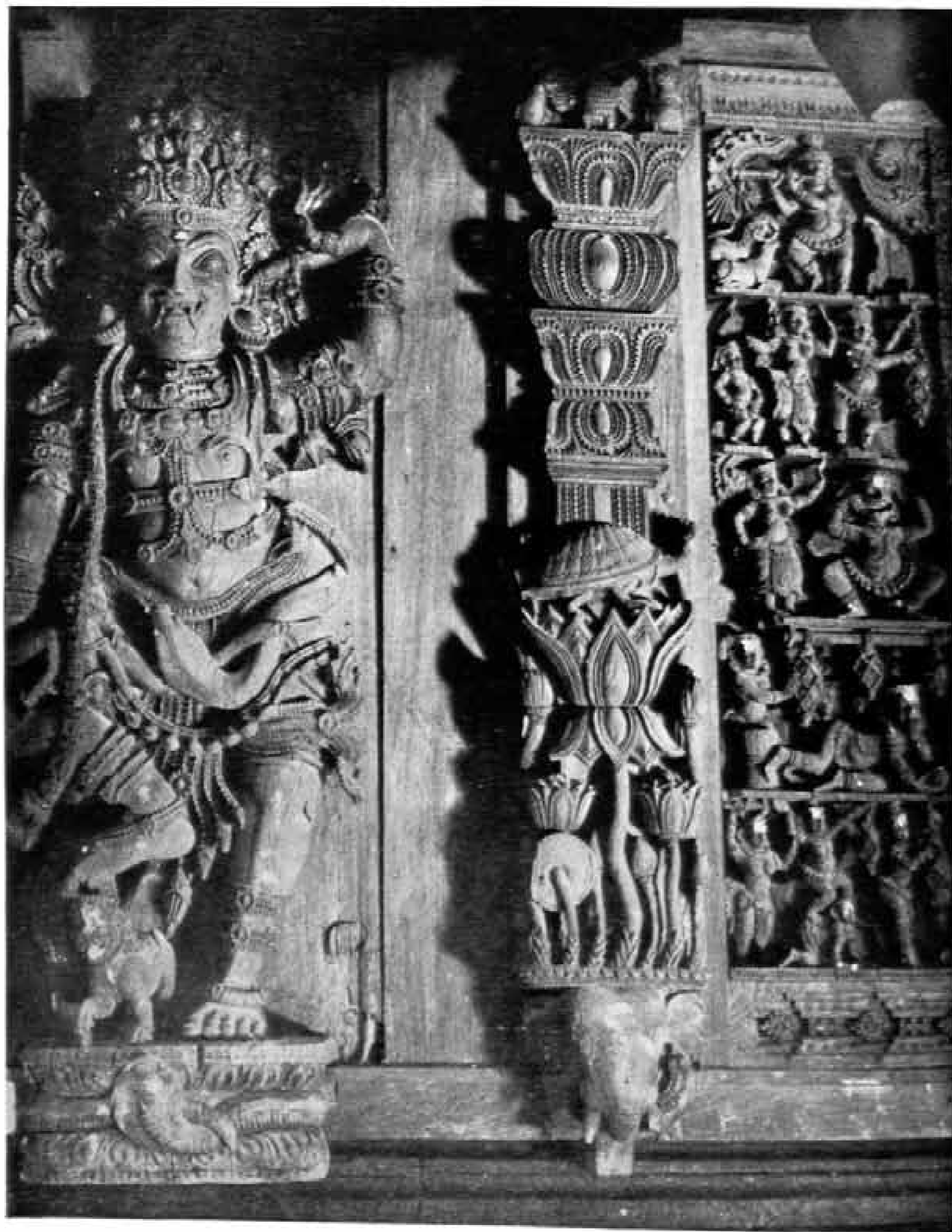


A

District Trivandrum : A, *dvarapala in the Vishnu temple at Aramada;* B, *Nataraja in the Janardana temple at Varkkalla.* *See p. 79*



District Kozhikode, Tiruvanur: apsidal Siva temple. *See p. 81*



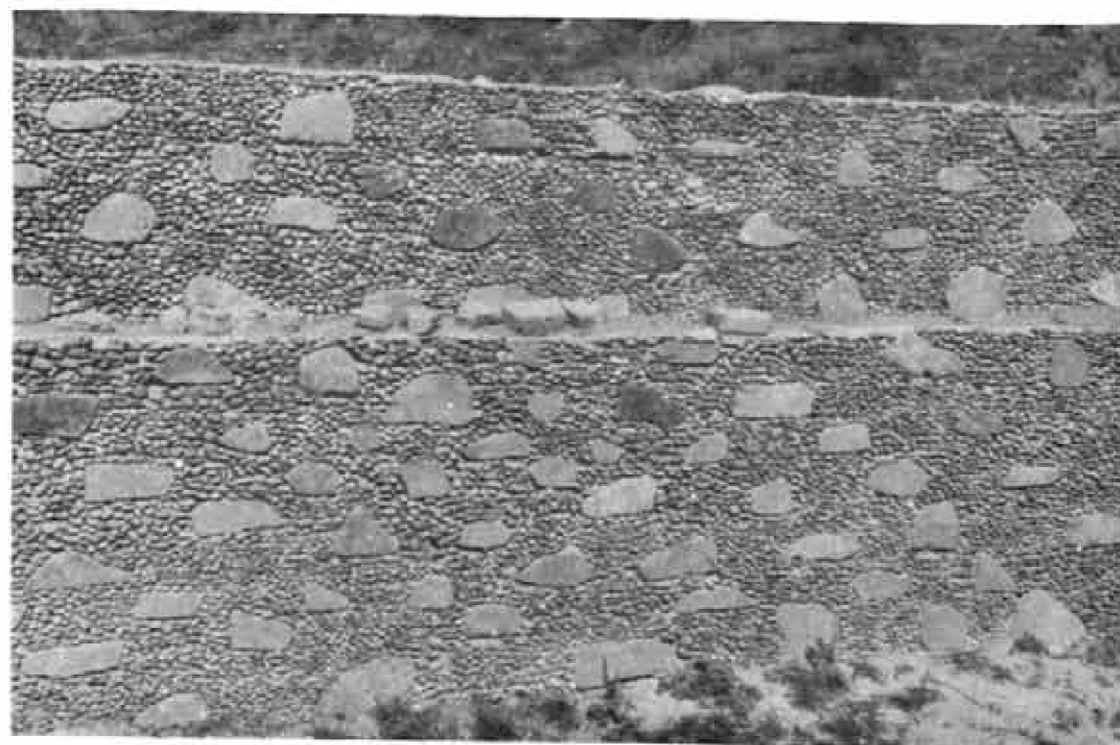
District Alleppey, Kaviyur: wood-carvings on the wall of the Siva temple. *See p. 81*



Kottayam : wall of the Tirunakkara Siva temple. *See p. 81*

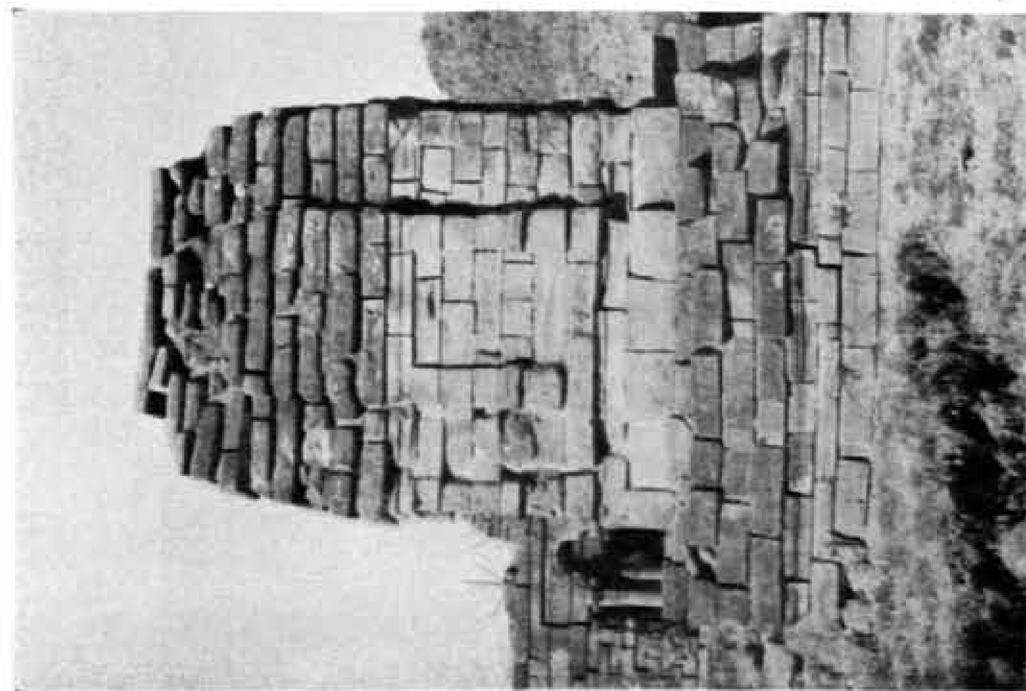


A



B

District Srinagar, Harwan: excavated diaper-masonry structure; A, *before, and* B, *after repairs.* *See p. 87*

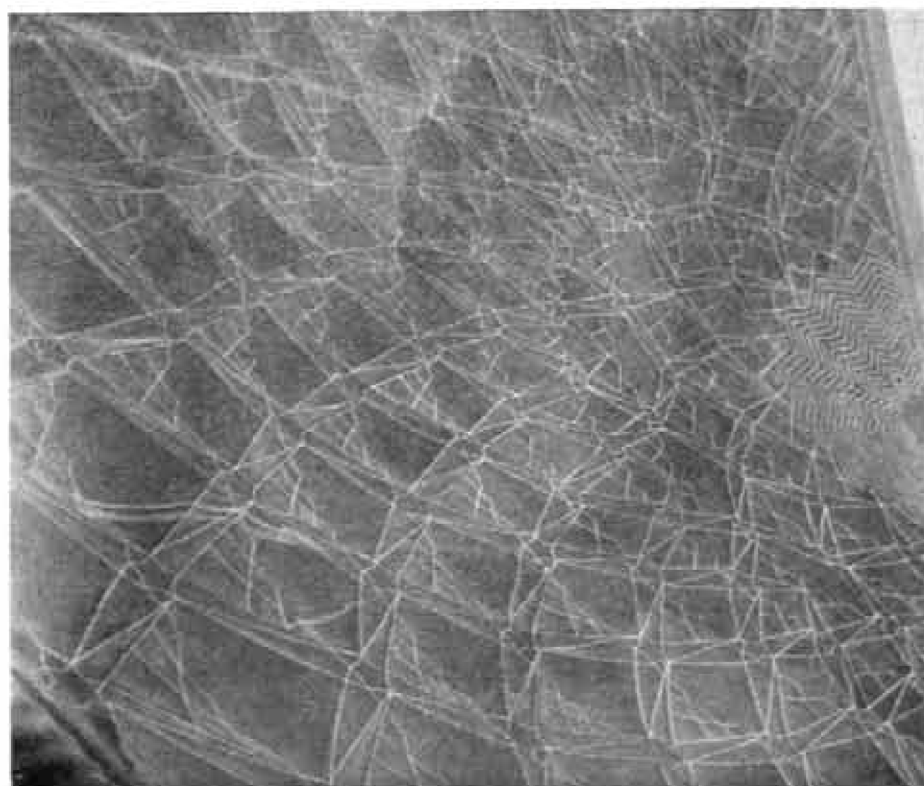


A



B

District Udhampur, Kiramchi : medieval temple, A, before, and B, after repairs. *See p. 87*

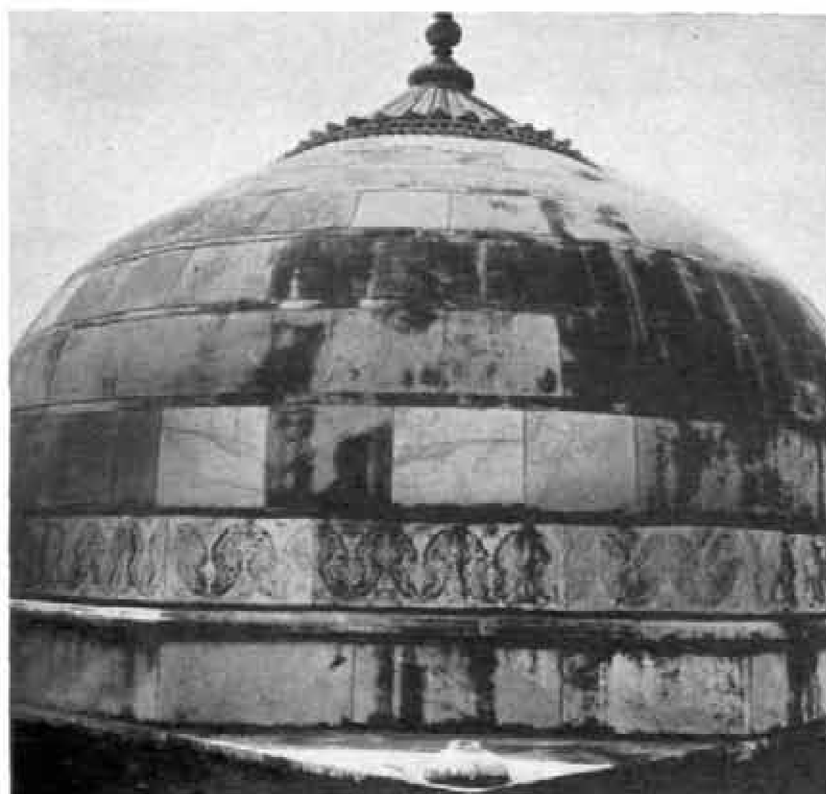


B

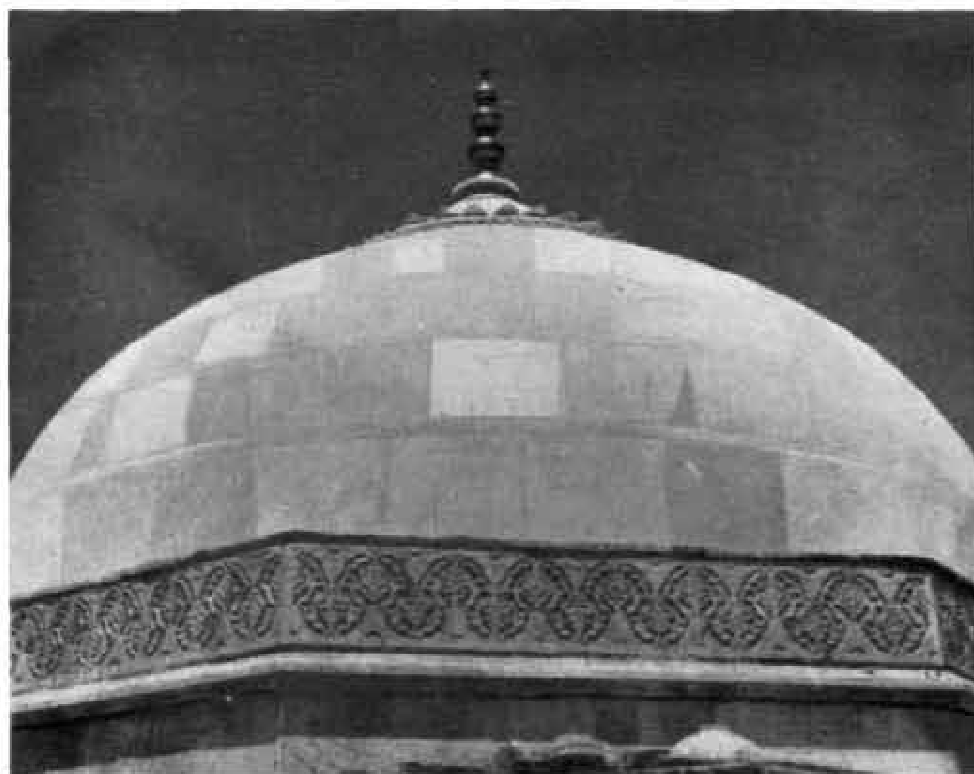


A

Agra, Taj Mahal : soffit of the arch, A, *before, and* B, *after repairs.* *See* p. 88

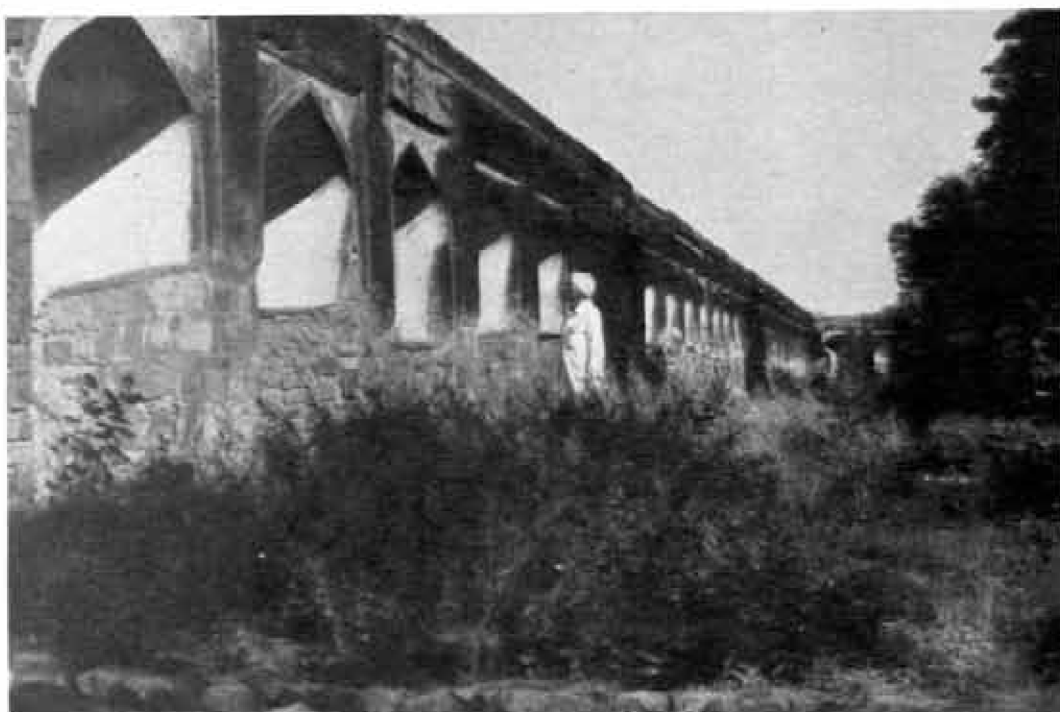


A



B

Fatehpur Sikri, District Agra: dome of the tomb of Sheikh Salim Chishti, A, *before, and* B, *after repairs.* *See p. 88*



A



B

Purana Qila, New Delhi: cells on the south-western corner, A, before, and B, after repairs. *See p. 90*



A



B

District Alwar, Garh, Nilakantha temple : A, *before, and* B, *after conservation.* *See p.* 92



A



B

Golkonda, Fort: bath-rooms attached to royal apartments, A, before, and B, after clearance. *See p. 93*

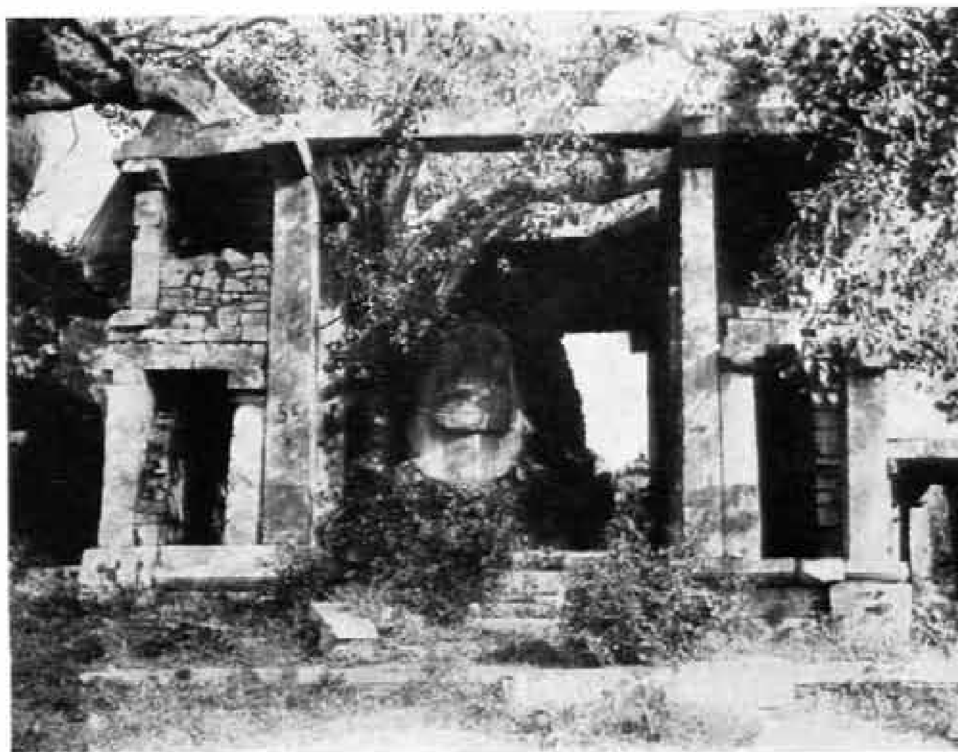


A

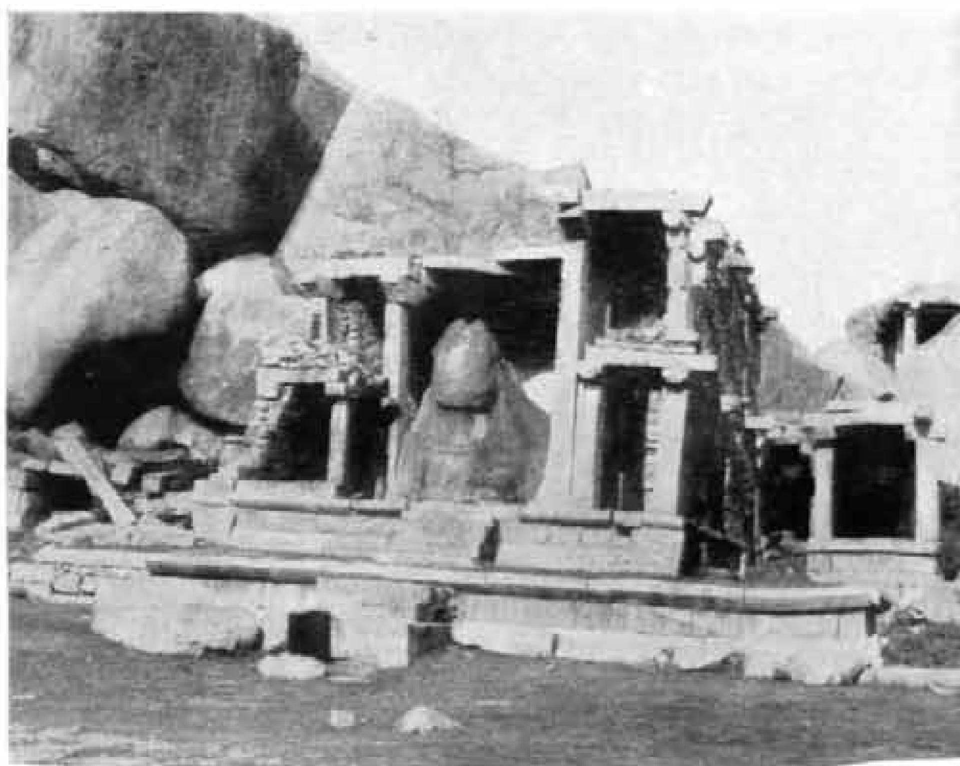


B

Golkonda, Fort : apartments adjoining the Khilawat, A, *before, and* B, *after clearance.* *See p. 93*



A



B

Hampi, District Bellary: Nandi in mandapa. A, *before, and* B, *after clearance and repairs.* *See p. 94*



A



B

Thanjavur, Brihadisvara temple : ardha-mandapa, A, *before, and* B, *after repairs.* *See p. 95*



A



B

Tambde Surle, Siva temple : A, *before, and* B, *during conservation.* *See p. 97*



B



A

Aihole, Kunti temple-complex: A, *before, and* B, *after repairs.* *See p. 99*



A



B

Pattadkal, Sangamesvara temple : A, *before, and* B, *after repairs.* *See p. 100*



A



B

Bamiyan, Afghanistan : A, *strengthening of painted plaster and chemical cleaning in progress;* B, *untreated and treated paintings.* *See p. 108*

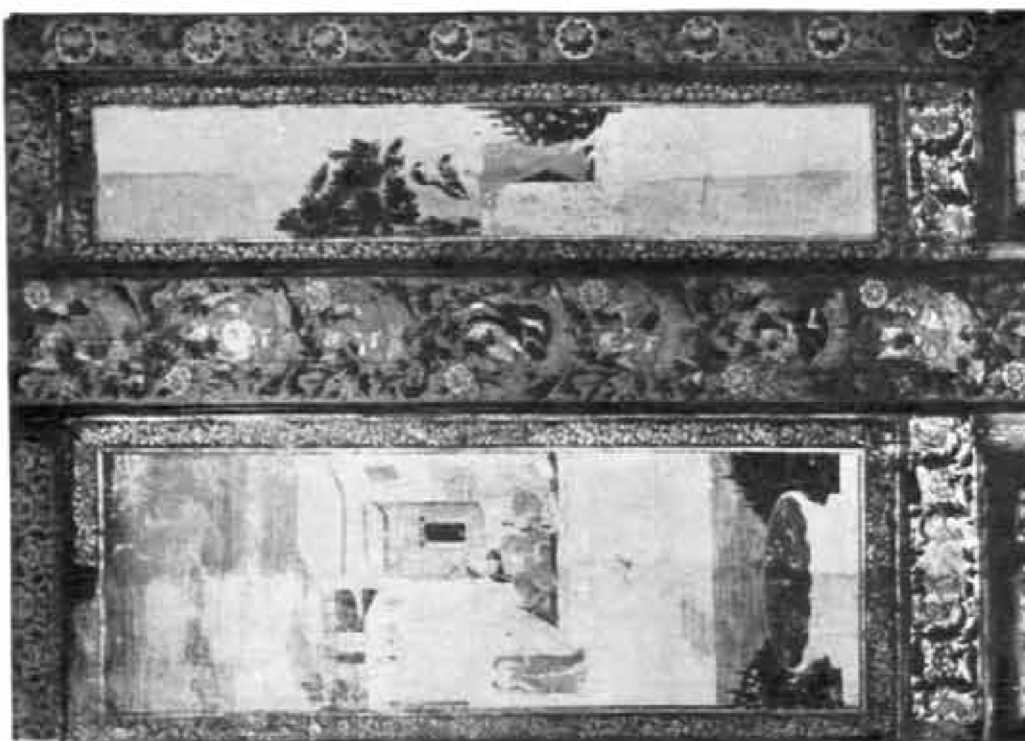


B

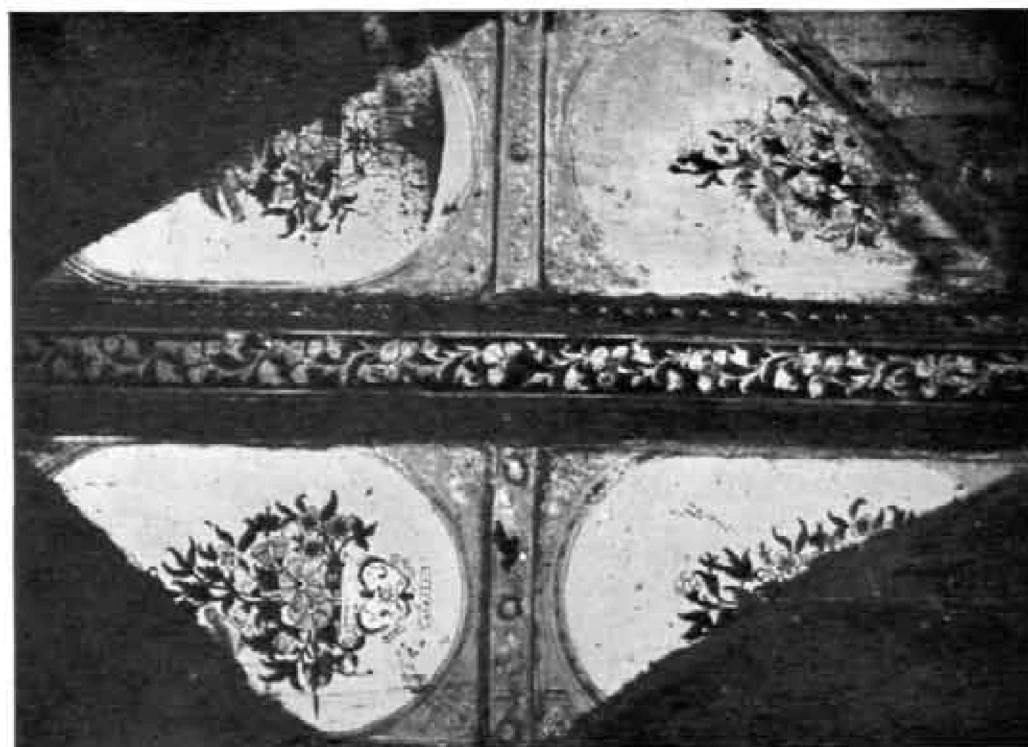


A

Bamiyan, Afghanistan : A, damaged painted plaster, and B, secured painted plaster. *See p. 108*

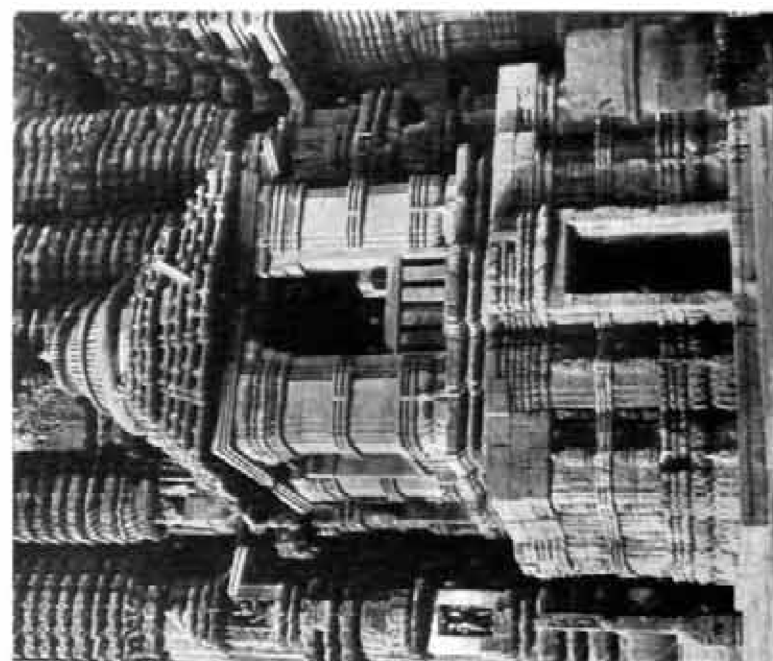


B

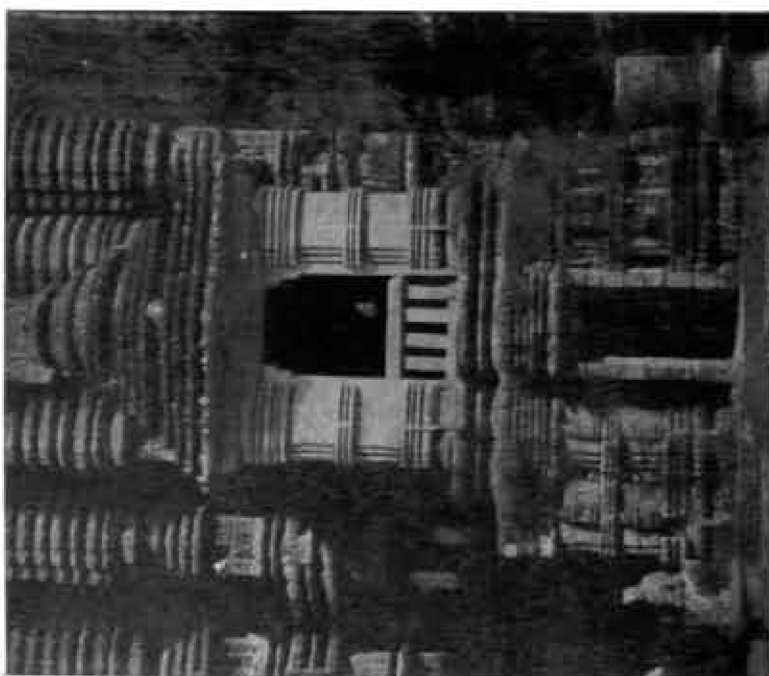


A

Vadodara, Tambekarwada : paintings on the wooden doors, during treatment. *See p. 109*



B



A

Bhubaneswar, Ganesa temple : A, *before, and* B, *after chemical treatment.* *See p. 110*